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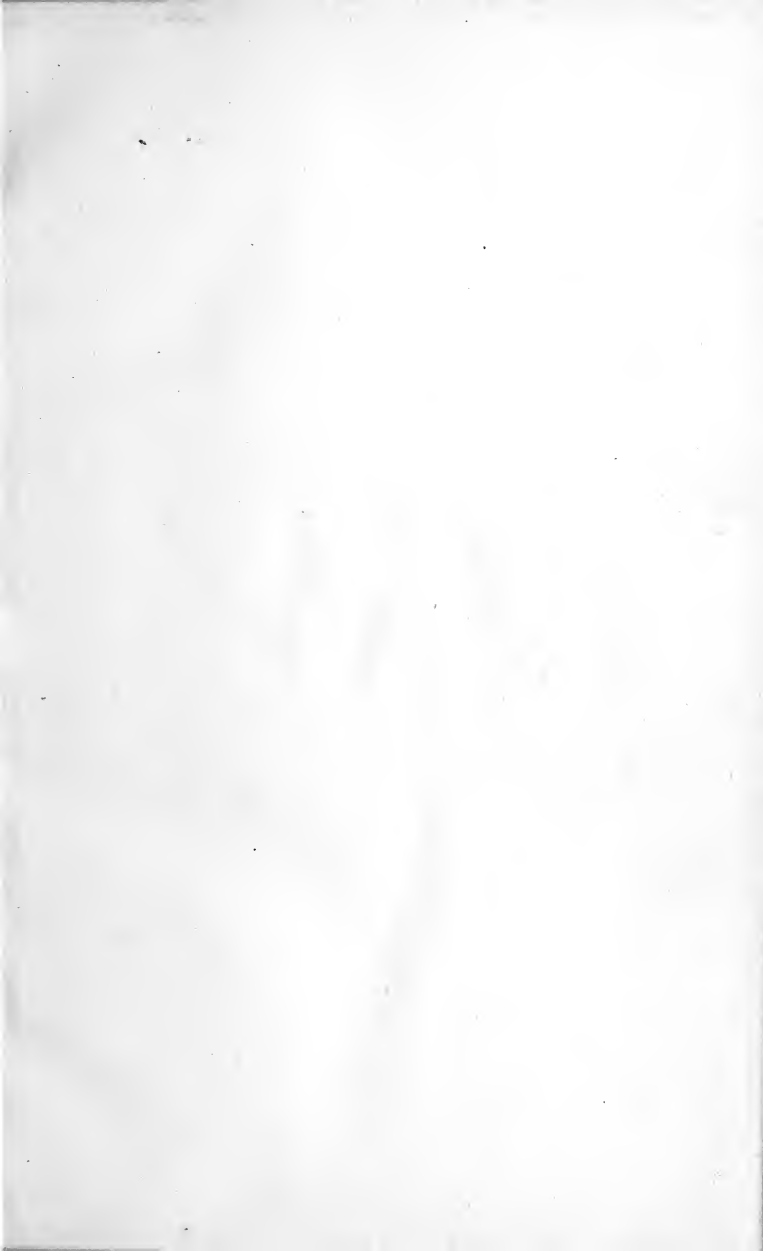
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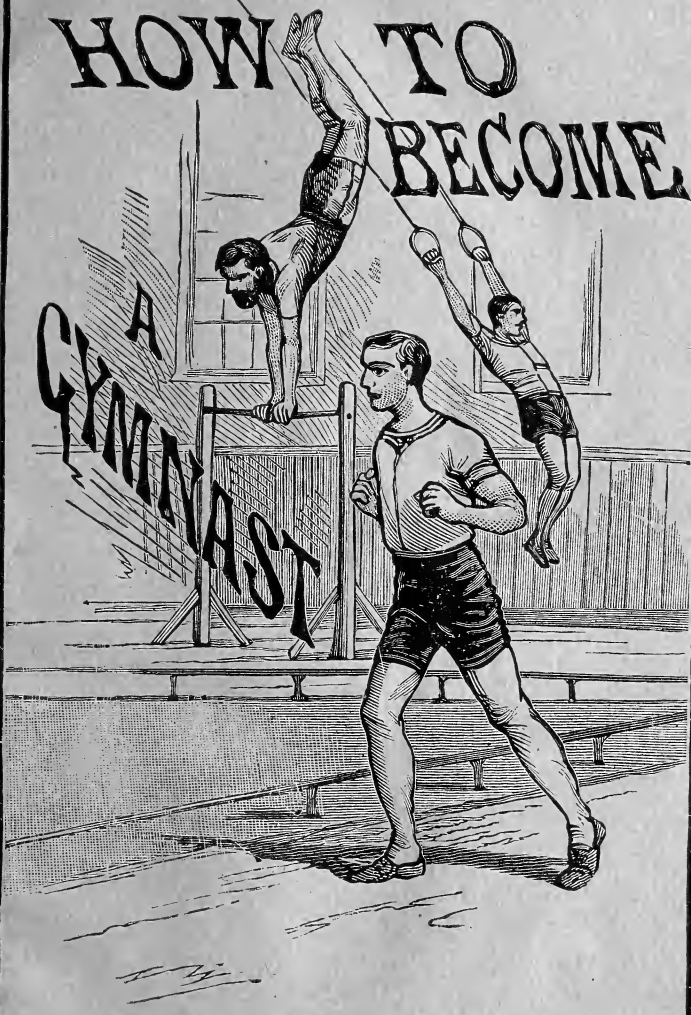






# HOW TO BECOME

A  
GYMNAST







# HOW TO BECOME A GYMNAST.

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Containing Full Instructions for All Kinds of  
Gymnastic Sports and Athletic Exercises.

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EMBRACING 35 ILLUSTRATIONS.

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BY PROF. W. MACDONALD.

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A Handy and Useful Book.

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# How to Become a Gymnast.

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## INTRODUCTION.

SOME generations since, the state of society was so essentially combative, that men valued mere brute force far beyond the more ethereal qualities of the mind, and cultivated it accordingly.

To train the body was the grand end of education; and the best-educated man was he who could strike the heaviest blows, and endure the greatest labor.

Sometimes a knight and a gentleman possessed the accomplishment of reading, and thereby obtained the character of a great scholar; while, if he could also write sufficiently to sign his name, was in some danger of suspicion as a wizard.

As civilization proceeded in its onward march, men began to feel that learning and science did not really degrade human nature, and perceived that a knight might chance to be a better gentleman if his mind were cultivated as well as his body.

There seems also to have been a little jealousy at work; for as learning was, as a matter of course, confined to the cloisters, it naturally followed that their inmates exercised a sort of increasing influence over the strong-handed but pudding-brained race that surrounded them.

So, by degrees, it happened that the brains of Americans, after being for many generations systematically cramped, began to expand and develop themselves.

Then followed a reaction, which has continued nearly to the present day.

Nowadays the brain is stimulated from early years, forced like a cucumber under a glass shade; the intellect is culti-

vated at the expense of the body, which is left to grow as it best can.

In this book I say nothing of the education of the affections, for this subject belongs to another place.

But people are beginning to awake to the idea that the body is a very important portion of the humanity, and to feel that the health of the body is most influential upon the mind.

When the body is indisposed, the brain is indisposed also, and the mind cannot act properly upon its disordered medium. The intellectual powers lose their grasp, the fancy ceases to glitter under the pressure of illness, and a temporary attack of indigestion, which is mostly caused by inert habits, might lose an empire. According to history, it did once lose a battle.

Happily there seems now to be a general feeling that body and mind ought to be developed to the utmost, for they are both gifts to us, and for the proper use of both we are responsible.

I have for years been much impressed with the exceeding value of gymnastic exercises in educating the young, and have always introduced them as a regular part of education.

Even irrespective of the increased health that those studies impart, and the spring which they give to the mind, they possess one great advantage, namely, that they endow the gymnast with great presence of mind in difficulties.

By practice a gymnast's fingers and toes cling like burrs, where ordinary people could find no hold at all; and he feels himself perfectly safe, where others would assuredly perish.

It is curious that we, who possess perhaps the finest and strongest figures of all nations, should leave ourselves so undeveloped bodily. There is not a man in a hundred who can even raise his toes to a level with his hands when suspended by the latter members: and yet to do so is at the very beginning of gymnastic exercises.

We, as a rule, are strong in the arms and legs, but weak across the loins and back, and are apparently devoid of that beautiful series of muscles that run round the entire waist, and show to such advantage in the ancient statues. Indeed at a bathing place, I can pick out every gymnast, merely by the development of these muscles.

It must be remembered, too, that a man need not possess very large muscles to be a very strong man.

At first the effect of these exercises is to enlarge all the muscles; but after awhile they become smaller in volume, but wiry and sinewy in texture, with no superabundant fat among their fibers.

## EXERCISES WITHOUT APPARATUS.

## COMMENCEMENT.

At the beginning of gymnastics there is no need for any apparatus whatever, and the beginner will find that several of the feats which I am about to mention will tax his powers to no small degree before he takes to ropes, horses and poles.

If he should feel himself fatigued while learning any feat he should rest awhile, and when refreshed, either try again or pass to another movement.

## DRESS.

The best costume for a gymnast (if he uses any costume at all) is a light and loose flannel suit with a belt round the waist, that can be buckled to suit the convenience of the wearer.

Some gymnasts like their belts to be very wide, and tolerably stiff.

The shoes should be quite light, made of soft leather, and without heels.

Always keep a coat or wrapper at hand, and put it on while resting, for there is nothing that is more likely to give cold as to sit in the open air, or in a draught, while heated and fatigued.

The gymnast will find himself much benefited by a sponging with tepid water immediately after he has finished his exercises. If practicable, a shower-bath is even better.

## ECONOMY OF POWER.

The study of gymnastics does not only increase the bodily strength, but teaches the learner how to economize that power which he possesses.

When an unskillful person is trying to perform any feat—such, for example, as raising himself by his hands—he makes a series of violent struggles, and flounders about with his legs.

Now every movement, except that which is requisite for the performance, is just a waste of so much strength, and only serves to exhaust, instead of assisting.

A good gymnast performs all his feats quietly and easily; and, indeed, it is almost a general rule, that when some feat appears to be especially easy, it is in reality exceedingly difficult.

We now proceed to the first exercise.

## EXTENSION.—No. 1.

Place the feet close together, and stand perfectly upright.

Now stretch the hands out straight in front, at the level of the shoulders, and place the palms together.

Separate the hands, and still keeping them at the same level, and the arms straight, try to make the backs of the hands meet behind you.

Continue to practice this movement until the hands meet easily behind. It is very difficult at first, but soon becomes easy, and is a splendid mode of opening the chest.

Take care to keep the feet together, and the body upright.

#### No. 2.

Stand as before, with hands in front, palms upwards.

Close the hands, and bring the elbows sharply backwards until the hands are level with the sides.

Send them forward again, as if you wanted to annihilate the enemy in front, and repeat until tired.

#### No. 3.

Stand as before, but bring both fists to the shoulders.

Send them upwards, as if the enemy were in the clouds. Bring them down as if there were another on the ground who must be crushed with the elbows.

#### No. 4.

Stand firmly and uprightly, throwing the weight of the body rather on the front of the feet.

Stretch out both hands, with fists tightly shut.

Now bring them slowly over the head and make them revolve in circles, first forward and then backward.

These exercises should be done very slowly, and especial care taken that the body is kept upright.

These extension movements are intended to give ease and pliancy to the arms and their joints.

The beginner must expect to find himself rather stiff after he has been performing them, especially after No. 1; but the feeling will very soon wear off, and does not again make its appearance.

#### TOE PRACTICE.

Place the hands on the hips, and stand quite upright.

Rise slowly on the toes as high as possible, and remain so as long as possible.

Do this many times, for it strengthens the calves of the legs mightily.

Remember to keep the knees quite straight.

After practicing this movement for some time, vary it by jumping on the toes, keeping the knees stiff, body upright, and the heels well off the ground.

#### KNEE PRACTICE—No. 1.

Stand as before, and kick your thighs with your heels, using each leg alternately, and as rapidly as possible.

## No. 2.

Keep the body very upright, and strike the chest with each knee alternately.

Be very careful not to stoop forward so as to meet the knee with the chest.

This exercise is intended to loosen the knee-joints in another manner.

## No. 3.

Stand as in No. 1, and kick both thighs with both heels simultaneously.

A slight spring from the toes is required to achieve this feat properly.

If rightly performed, the feet should come to the ground on precisely the same spot. It looks very clumsy if the performer loses his balance, and keeps altering his place. It shows that his body is not perfectly upright.

## No. 4.

Place both feet together, the toes on a line, and the hands on the hips.

Now kneel slowly until both knees rest on the ground.

Rise again, without removing the hands from the hips or the toes from the line.

Do it twenty times at least, without stopping.

## No. 5.

Now for the first hard one.

Stand as before, with the toe of one foot on the line (say the right foot) and the other foot off the ground.

Keep the left foot from touching the ground, and kneel upon the right knee.

Rise again without moving the toe from the line.

This is rather difficult, and requires a nice balance of the body. Be careful to kneel very slowly, or otherwise the knee will come down with such a thump that it may suffer no small inconvenience.

Practice this with each foot alternately.

## No. 6.

Plenty of knee practice. Here is another stiff one.

Stand on the right foot, bend the left knee, and hold the left foot in the left hand.

Now touch the ground with the left knee, and rise up again without losing hold of the foot or suffering it to touch the ground.

As in the former cases, the right toe should remain on a line and never move from it.

At first it will appear as if some resistless power were

dragging the foot out of the hand, but after awhile it becomes easy.

Practice with both feet.

### No. 7.

As the preceding, only do not hold the foot or suffer it to touch the ground. Take care not to lose the toe-line.

### No. 8.

Hardest of all, and very comical.

Hands on hips, toes together on the line, body quite upright.

Rise on the toes, and then sink gradually down, the knees projecting in front, until you sit on your heels, the whole weight of the body being supported on the toes only.

Down you go, so pick yourself up, and persevere until you succeed. It is not so much the strength as the knack that is needed here.

### SITTING PRACTICE.—No. 1.

Stand upright, cross the feet, and sink gradually until you rest on the ground after the tailor fashion.

Rise again, without moving the hands from the hips or the feet from their places.

### No. 2.

This exercise is a capital test of the ability of the tailor who makes the gymnastic suit of clothes; for if there should be a defect in the nether garments, they will fly asunder with a report like a popgun.

When the gymnast can manage this feat, he may congratulate himself on having made a considerable advance.

Stand upright, extend both hands in front as a counterpoise, which is much needed, and hold out the left leg in front, at right angles with the body, and knee quite straight.

Now, still keeping the left leg in its position, bend the right knee very slowly, and *sit on the ground*.

Being seated, rise again, preserving the same attitude.

Don't be in too great a hurry to take your seat or you will come down with a run.

This is an invaluable exercise, as it gives a power of raising the body when in a position from which none but expert gymnasts could even stir. It is very difficult at first, for we feel a great repugnance to let the body sink sufficiently low, and most who try it declare it to be impossible.

However, after a few trials, they get over its difficulties, and manage it easily.

### CUTTING CAPERS.

Stand with the toes together, and hands on hips.



Spring upwards, and, as you rise in the air, cross your feet and return them to the same position.

The toes must be kept pointed, as they will strike against each other as they attempt to cross.

Do not heed the curious sensation as if the feet were held by bonds, but persevere.

#### FOOT TO HAND.

Keep the body upright, hold out the right hand in a line with the shoulders, and kick it with the right foot.

Practice both feet alternately, knees quite straight.

#### THE COMPASSES.

Easy enough, but useful. Spring into the air, and spread the feet as widely apart as possible, bringing them together again before touching the ground.

#### THE HANDSPRING.

Stand on the toes, lower yourself as in knee practice No. 8.

Throw yourself forward at full length, body stiff, and support yourself on the hands and tips of the toes. Take care of the nose.

Then spring from the ground with the hands and clap them together before they touch the ground again.

To rise neatly from this position bring your feet between the hands with a sudden spring. It looks neat if you clap your hands as you bring up the feet.

#### TOUCHING TOES.

Hold the hands above the head, the palms in front and the thumbs just touching each other.

Now, keeping the knees stiff and straight, bend over until the fingers rest on the toes. Continue to practice this until you can pick up a sixpence at each heel while the knees are kept straight.

#### OVER THE STICK.

Take a stick of any kind, a poker or a walking-stick will do, and hold it with the hands three feet apart.

Stoop down and place your knuckles on the ground in front of your toes, still retaining hold of the stick.

Then step over the stick without losing your grasp or moving the knuckles from the ground. It is capital practice.

#### JUMPING THROUGH THE HANDS.

Hold both hands in front of the body, place the tips of the middle fingers together and jump through them without separating the fingers.

Take care not to knock the chin with the knees, for both those portions of anatomy have to approach each other very closely before the feet can pass through the arms.

Don't attempt to perform this feat if your shoes have heels to them, or your thumbs will suffer.

## EXERCISES ON THE PARALLEL BARS.

### THE BARS AND THEIR CONSTRUCTION.

THE Parallel Bars are very simple in their structure.

They are two wooden bars, about six or eight feet in length, four inches deep and three wide, with their upper edges rounded off to prevent damage to the hands.

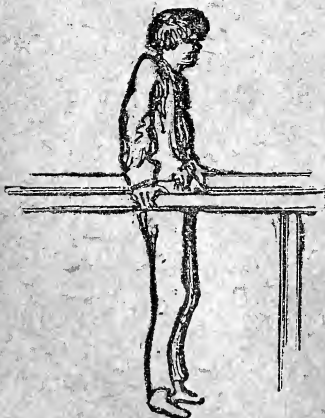
They are placed about eighteen or twenty inches apart, and four feet high, and fixed according to pleasure.

If they are intended to be permanent, they can be supported on four posts firmly driven into the ground.

But if they are to be used under cover they ought to be supported on a wooden framework. And it would be much more convenient for the frame to be nicely mortised together and held by screws, so that, in case of removal, it can be taken to pieces, and packed in a small compass.

This mode of manufacture is just as easy as any other, and infinitely more convenient,

If I were to give an account of *every* maneuver that can be executed in the Parallel Bars I should require a large volume especially devoted to that subject.



I shall, therefore, content myself with noticing the more important feats that are generally executed, and leave the reader to invent as many more as he chooses.

### TO GET ON THE BARS.

Stand between the bars, with hands closely pressed against the sides. Spring up, and placing a hand on each bar, remain suspended between them. This is called the first position.

When fairly established, accustom yourself as much as possible to the bars, and practice the wrists in their work.

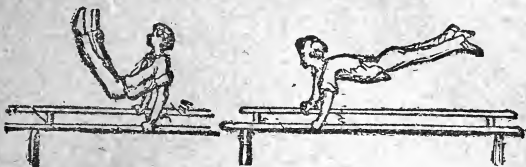
### SWINGING.

The next feat is called the swing.

While suspended between the bars, with the knees straight

and the feet touching each other, begin to swing the body backwards and forwards.

By degrees increase the swing, until the body, when swing-



ing backwards, is nearly upright in the air; and when going forwards, the feet come nearly over the head.

The accompanying figure shows a learner who can nearly accomplish this feat.

#### THE WALK.

First position.

Now walk along the bars, using the hands as feet, and when you have reached the end, walk back again.

It is not so easy as it seems, and the back walk tires the arms entirely.

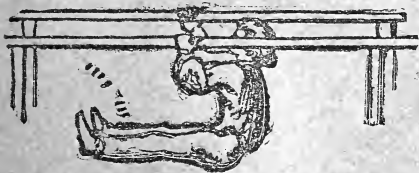
Keep the arms straight, and don't shrug your shoulders over your ears, or make irregular and hasty steps.

#### THE LETTER L.

First position.

Raise the legs to a level with the bars, making them form a right angle with the body, and keeping the knees quite straight.

In this attitude the gymnast turns his person into a representation of the letter L.



After doing this figure in the first position, stand between the bars, pass the hands under them, and so grasp them from the outside. Then make the L again

as shown in the cut. This is a very useful figure to learn and strengthens the loins greatly.

#### SITTING ON THE BAR.

When in the first position swing the legs forward, and you will be able to seat yourself on either bar, as shown in the engraving.

A more powerful impetus will enable the gymnast to throw himself entirely over the bar and to come to the ground.



The swing in either direction will be found sufficient to throw the gymnast over the bars without any apparent exertion, only he must be careful to keep his knees straight, and to clear the toes.

#### THE JANUS.

Sit on the bars as on the saddle—one leg over each bar, and the hands resting on the bars behind the legs.

Now disengage the feet, swing boldly through the bars, and seat yourself astride, with your face in just the opposite direction.

Be sure to swing high enough, or the shins will be sadly knocked against the bars.

#### RISING AND SINKING.

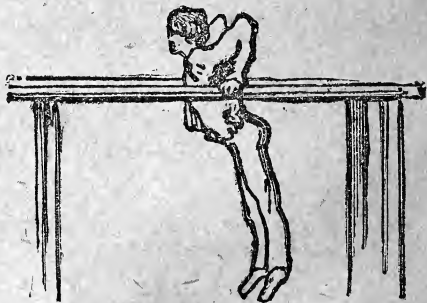
First position.

Sink gradually between the bars, until you assume the attitude shown in the cut.

Remain in that attitude for a short time, and then rise again.

There are few exercises that open the chest more decidedly than this.

There is rather a neat modification of this maneuver, called



#### KISSING THE BARS.

Sink between the bars, as in the preceding paragraph.

Then kiss each bar successively behind the hands, and rise.

It tries the wrists somewhat, as well as the chest.

#### BAR-JUMPING.

First position.

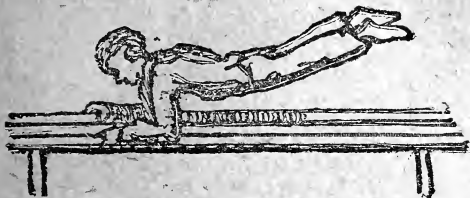
Now proceed along the bars by a series of jumps with the hands.

Practice this at first with bent knees to make the work

easier, but do not rest content until you can jump along backwards and forwards with straight knees.

### THE ARM SWING.

First position.



Suddenly bend the elbows, and rest with the fore-arms on the bars. Swing while in this position, and look

out for elbows.

When you have swung sufficiently, hang suspended between the bars, and then raise yourself on the hands again.

Practice the drop upon the fore-arms and the rise as often as possible.

### STANDING ON THE BARS.

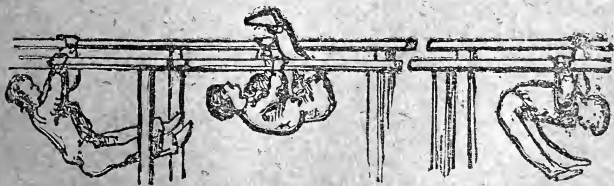
Now one of our former exercises (Sitting Practice No. 2) comes into play.

Sit astride either bar, and secure a good balance of the body.

Then place the sole of one foot on the bar, and hitch the other toe under it.



Now, by means of the toe, draw yourself to an upright position, and bring both feet together.



This is a very neat little exercise, and often entirely baffles those whose previous training has not fitted them for it.

## THE BARBER'S CURL.

Go to either end of the bars, and do the letter L.

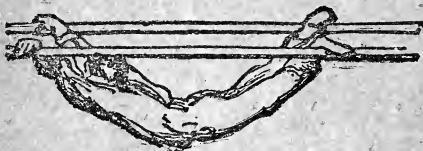
Count ten and turn slowly over, as the central figure in the engraving, until you assume the attitude represented by the right-hand figure.

Count ten and re-curl yourself to the L, when you may again count ten, and then rest yourself.

Be careful to keep both knees quite straight, and the feet well off the ground.

## THE SAUSAGE.

Begin by kneeling on the bars, and placing both hands on them.



Slide the hands forward and the legs backward, hitching the toes over the bars, until the body hangs between them.

Count ten and

draw yourself up again.

Don't be afraid. You will not snap across the middle, although you may feel as if you were about to do so every moment.

## THE SPRING.

Swing at one end of the bars, and, when in full course, launch yourself forward, alighting on your hands in the grass-hopper fashion shown in the engraving.



Very great care must be taken of the accuracy of the balance, or down you go between the bars and come flat on your back on the ground.

## TOUCHING THE BARS.

First position.

Now, suddenly take the right hand from its bar, and touch the left bar in front of the body, instantly returning the

hand to its own bar. Look out, or you will drop through the bars.

Do the same with the left hand.

When you can do this easily, practice it with this modification—that you pass the hands behind the body in touching the bars.

### THE GIANT STRIDE,

#### Or Flying Step.

Many schools possess this admirable piece of apparatus, but in very few is it used properly, or its powers rightly shown.

Generally the pupils are contented with taking hold of the ropes and running round the pole. Then they complain that the thing is useless.

Whereas, the Giant Stride is a capital affair for a school, as it can accommodate from four to six players at a time, and lends itself to all their peculiarities.

If they come out on a cold day, and want to be warmed, five minutes of Giant Stride will send a glow through their systems that will defy any frost.

If they want to jump over heights, the Giant Stride will launch them over a ten-foot pole. If they wish to perform a series of graceful movements, the Giant Stride affords facilities little short of those given by the ice.

#### STRUCTURE OF THE GIANT STRIDE.

It is composed of an upright pole, tipped with a revolving cap, to which are fastened sundry ropes.

The central pole is best made of a tree trunk—if a rooted tree, and it can be left undisturbed, so much the better.

Otherwise, it must be of thoroughly well-seasoned wood, strong and genuine.

The lower end should be charred, in order to keep it from rotting, and the hole in which it is set should be quite six feet deep, and paved with stones.

From the ground to the top of the pole should be about fourteen to fifteen feet.

An iron cap is then placed on the top, traversing freely on a pivot, and carrying four rings, on which are fastened four ropes. To the end of each rope should be fastened cross bars of elm or ash about two feet in length.

The apparatus being thus completed, the gymnasts are to hold the cross bars at arms' length, and run round the pole, bearing their weight on the ropes, so that their hands, heads, and feet are in the same line with the rope. Their feet will then gradually leave the ground, and only touch at intervals.

After practicing this from right to left, do the same from left to right, until it is as easy to run one way as the other.

Take care not to lose your balance, or you will turn round and grind yourself on the ground very unpleasantly.

This is but the beginning. The young gymnast should then run round, keeping himself constantly rotating, which may be done by the touch of the toe against the ground.

Another accomplishment is to describe four circles in going round the pole, making the hands the center of each circle, and the feet the circumference.

A pole should also be erected, about a yard outside the range of the feet, and to this should be fixed a number of pegs, which will support a string passing from the central pole. Over this the gymnasts should leap, performing the movement merely by the centrifugal force, and not by the spring of the feet.

About ten feet is considered a good height for a boy to attain, but a man can go higher.

### CLIMBING THE BOARD.

LET a board be fixed at an angle against some object, such as a wall, and capable of alteration.

Let it first be fixed at an angle of forty-five degrees or so, or even at a less angle than this if necessary.

Then grasp the outside edges of the board with both hands, set the feet flat upon its center, and try to mount by moving hands and feet alternately.

Make very little steps both in ascending and descending, and, in the latter instance, be specially careful to avoid a sudden slide down the board.

As you improve, set the board more upright, until you can ascend it when it is quite perpendicular.

It is also possible to ascend a pole in the same manner.

Remember that the soles of the shoes must not be new and slippery, or neither pole nor board will be surmounted.

### CLIMBING THE POLE.

THE ordinary mode of ascending a pole or a bare tree-trunk (in some places called "swarming,") is by grasping it with the arms and legs, and alternately raising them to higher positions.

Some gymnasts ascend the pole as stated in the preceding paragraph; and it certainly has the advantage in point of appearance.



In descending the pole, be careful not to slide down too fast, or there will be excoriations of skin and damage to clothing.

### CLIMBING THE ROPE.

THIS most useful exercise should be constantly practiced.

In every gymnasium there is at least one rope suspended, which ought to hang freely, and to be without knots.

The easiest mode of ascending the rope is by grasping it as high as possible with the hands, and holding it also with the feet, one of which is under and the other pressing upon the rope.

Thus the weight of the body rests considerably on that portion of the rope that is held by the feet.

Then, as the hands are raised to take a higher hold, the feet sustain the body, and *vice versa*.

But one who means to be a true gymnast despises the feet in rope-climbing and pulls himself up solely by the alternate action of the hands.

Be very careful never to descend by letting the rope slide through your hands, as it will assuredly inflict a painful wound, and may cut them to the bone.

Always descend hand under hand.

Many exercises may be performed on the rope, which will suggest themselves to the gymnast.

For example, it affords a decided contrast to the ordinary mode, if you grasp the rope with the hands, and then, inverting your position, throw the feet over the head, and hold the rope between them, keeping the knees straight.

In this attitude ascend the rope and descend again, taking care not to let the hands slip, or the strength of your skull will be unpleasantly tested.

Again: Grasp the rope at a point about two feet from the ground, and retreat as far as you can, holding the rope in the hands.

Now leap into the air, and swing as far as you can, launching yourself forward, and marking the spot where the toes touch the ground.

Be careful to curl the body well upwards as you swing forwards, or you will assuredly scrape the ground just under the point where the rope is suspended, and the consequences will be disastrous to clothes and cuticle.

### THE HORIZONTAL BAR.

THIS is a very simple piece of apparatus, being merely a

pole fixed horizontally at any height that may best suit the gymnast.

There are several modes of fixing it, the most usual being to fasten each end to an upright post, which is furnished with mortises, so as to permit the height of the bar to be altered at pleasure.

But there is one mode, which I especially affect, called the triangle, which can be used wherever there is a beam of sufficient height for its suspension.

It is made as follows:

Get a bar of any strong wood—deal will do, if it is uniform in grain and quite free from knots. Its diameter is about two inches and a half, and its length a little over three feet.

Also, get a piece of well-made, but not very thick rope, about eighteen feet long, and securely fasten the ends of the rope to the ends of the pole.

Fasten an iron “eye” into the center of the rope, and you have the most important part of the triangle made. In fact, the rope and pole do form a triangle when suspended from the “eye.”

Have a strong iron pulley firmly fixed into the beam, pass a stout rope through it, fasten one end of the rope to the “eye” of the triangle, and haul away at the other until you have suspended the pole at the proper height.

Make fast the loose end, and then you have an apparatus that can be adapted to little boys of eight years old, or tall lads of eighteen years of age and six feet of stature.

The proper height for the horizontal bar is when the raised hands cannot quite reach it, and a small jump is requisite before the gymnast can suspend himself by his hands.

The triangle is useful, because it swings and twists about, and requires the gymnast to exert his power exactly in the proper direction; for if he does not so, away goes the bar out of his reach.

Besides, it is good to be accustomed to maintain a safe hold on so changeful a support, and not to heed any amount of swing or spin.

Having adjusted the triangle to the proper height, we begin by

#### HANGING ON THE POLE.

Jump up, and seize the pole with both hands, taking care to have the knuckles upwards, and the thumbs on the same side of the pole as the fingers.

This is indispensable. Never grasp the horizontal bar as you would a broomstick, but merely hitch the fingers over the bar in a fish-hook style.

Watch a monkey gamboling about his bars, and see how he holds them. The sloth, too, merely hooks his curved claws over the branches, and defies the gales to shake him off.

So, imitate the sloth as well as you can, and curve your hand into a hook-like form.

Let the body hang quite straight, but not stiffly so, the knees straight, and the toes rather pointed.

After awhile, practice hanging by each hand alternately, letting the other arm hang easily by the side. Don't twist round, or you will lose your hold.

A few blisters may be expected at first, but they are caused almost entirely by unskillful management of the bar, and will soon get well again.

#### THE WALK.

Hang on the bar, and make alternate steps with the hands, so as to carry you from one end of the bar to the other.

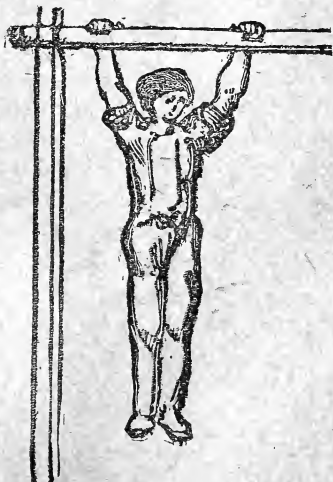
Do this first to one end of the bar, and then return by the same method. Be careful to make the movement equably, and don't kick the legs about.

When you can execute this movement properly, place one hand at each side of the bar, and do the same thing.

#### BREASTING THE BAR.

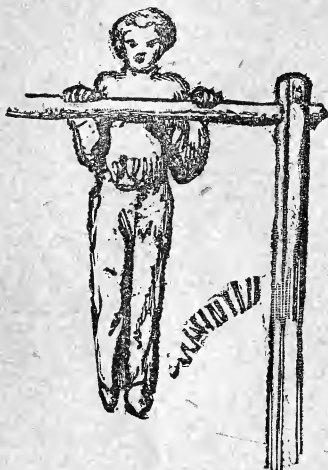
Hang on the bar, *knuckles uppermost*, and slowly draw yourself up until the chest rests against the bar.

Lower yourself as slowly, hang for a moment, and again draw yourself up.



This should be practiced continually, as it is the founda-

tion of most of the exercises, and strengthens the body and chest very considerably.



Let the legs hang quite still while doing it, and do not be content until you can draw yourself up twelve successive times without feeling fatigue.

#### SWINGING.

This exercise cannot be practiced on the triangle.

Hang on the bar, and communicate a pendulum movement to the body, gradually increasing it until you feel yourself in danger of flying off.

This soon happens at first, but after practice the body can be swung through the greatest part of a circle.

When you are well accustomed to the swing, you

will find that when the body has swung nearly as high as the pole, the hands bear but lightly on the bar.

So, take them off altogether, and launch yourself boldly



into the air. An inch or two will be sufficient at first, but many gymnasts can spring a foot or so from the pole.

It has a bold and dashing effect.

#### THE GREAT CIRCLE.

If the gymnast will only dare he will achieve.

But it is a trying affair for the nerves, both of performer and spectators, and never fails of producing quite a sensation.

Swing as in the preceding exercise, and when at the full swing backwards, with the body at its highest elevation, put on all the steam, and go completely round the bar.

There must be no half measures about this exercise, for

every particle of strength will be wanted to drive the body round so large a circle as that which is formed by the feet as a circumference, and the hands on the bar as a center.

Of course this is also impracticable on the triangle.

#### KICKING THE BAR.

Hang by the hands, and then slowly gather up the body, drawing up the feet until they touch the bar.

Both feet should be kept together, and the movement performed with steadiness.

One point to be observed in this exercise is, to throw the weight of the body and head as much behind the arms as possible, so as to make them counterbalance the weight of the legs and feet.

Do not attempt to jerk yourself up, or plunge about in the

exertion, for you might strain yourself by so doing.

Lower yourself slowly, and if you fail at the first few trials do not be discouraged. The strength and knack will soon come.

#### RISING ON THE BAR.

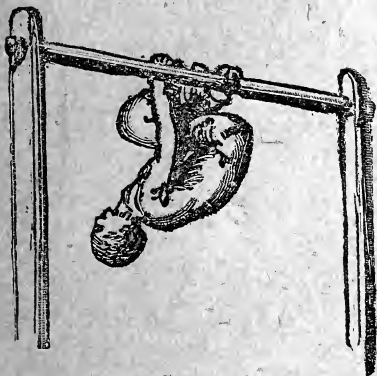
Draw yourself up to your breast, and then with a sudden impulse straighten the arms, so that you raise the body until the bar crosses it at the hips.

It is better to throw yourself an inch from the bar while you make the spring, as then the friction of the bar against the body is no hindrance.

This is a much more difficult feat than making the "Great Circle," although it appears to be nothing at all. Practice it by rising with the right arm first, followed by the left, then vice versa, and lastly with both arms together.

#### THE ROLL OVER.

After raising yourself as in the preceding exercise change the position of the hands so as to bring the finger-points on the same side as the body, then lean forward and roll fairly over the bar, dropping lightly to your feet.



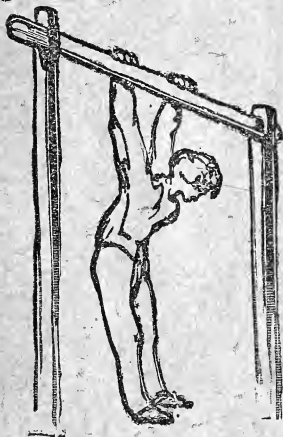
Take notice that in all cases the toes should be kept pointed; and that when the gymnast comes to the ground, he should do so on the tips of his toes, and not on the heel or the sole of the foot.

#### PASSING THROUGH THE ARMS.

Hang on the bar, and curl yourself over as in Kicking the Bar

But instead of letting the feet touch the bar, pass them neatly under it, and continue to pass the feet on until they hang as in the engraving.

Then, after hanging as long as possible, drop to the ground.



After you have practiced this well, instead of dropping to the ground, re-ascend, re-pass the feet, and then drop.

This is a magnificent exercise for the shoulder blades and the muscles of the back.

By practice you will be able to let the feet hang nearly as low when the arms are thus twisted as when they are straight.

#### SITTING ON THE BAR.—No. 1.

Pass the feet under the bar.

Then, instead of rolling over, stretch the feet quite straight into the air, so that you are in a perpendicular position, the heels in the air and the head pointing toward the ground.

Rest a moment in this position, and then draw yourself upwards by the arms until the weight of the legs and feet brings you upon the bar seated.

Take care not to overbalance yourself and come round the wrong way, a mistake which a beginner generally commits.

#### No. 2.

Hang on the bar and pass one foot, say the right, between the hands, and hitch it over the bar at the knee. Let the left foot hang as low as it can.

Give a good swing backward, using the left leg as a weight to increase the power of the swing, and come up-right upon the bar.

Now, bring the left leg over the bar, taking care not to overbalance yourself by so doing, and then you are seated.

## LEAVING THE BAR.

There are two neat modes of getting off the bar when you are seated upon it.

In the first method you put your hands on the bar, with the finger-points forward, slide easily backward, keeping your knees bent, roll over backward and come on the feet neatly.

The other plan resembles that adopted on the parallel bars.

Place both hands on the bar, either on the right or left side, the finger-points turned away from the person.

Then, with a slight spring, bring the feet over the bar and vault to the ground. Take care not to hitch the toes against the bar.

## BAR-JUMPING.

Hang on the bar, and, by means of the arms, jump along the pole from one end to the other.

This is a capital exercise, and should be performed with the knees quite straight.

It tries the arms considerably at first, and the hands too.

Practice it with the hands under the bar, and then with one hand at each side.

## CIRCLING THE BAR.

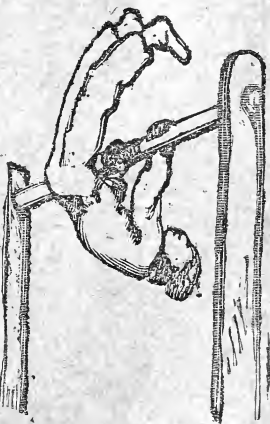
Now for a stiff one.

Hang on the bar, and draw up the body and legs as if about to kick the bar.

But, instead of kicking, or passing under it, raise the feet above the bar, continuing to draw yourself upwards until you have come quite round the bar. Do it slowly.

## LETTER L.

Hang on the bar, and then raise the legs until they form a



right angle with the body. Count fifty before you drop the feet.

#### ROASTING-JACK.

Put one knee over the bar, letting the other hang down, and hold on with the hands.

Now, swing backwards, and give yourself such an impetus that you come right round the bar, and come up again as before.

You should be able to spin round the bar a dozen times without stopping.

When you have practiced this exercise backward, do the same thing forward, of course shifting the hands to the opposite side of the bar. In the forward roll it is better to sit nearly astride the bar.

#### THE TRUSSED FOWL.

This exercise is calculated to test the power of the grasp and the force of the joints, as it seems at first to have the effect of pulling every joint out of its place.

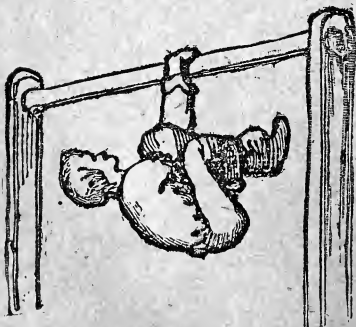
Hang on the bar, draw up the feet, and put the insteps against the bars.

Now push your body right through the arms, as if you were trying to turn yourself inside out, and after remaining in this attitude as long as you conveniently can, return in the same manner.

#### THE TRUE LOVER'S KNOT.

This is an exercise difficult to describe, and not very easy to do.

Proceed as follows:



Grasp the bar; pass the left knee through the right arm, so as to let the knee rest in the elbow; pass the right knee over the instep of the left foot; let go with the left hand, and with it grasp the right foot.

You will now be suspended by the right hand, and will be packed up in a remarkably small space.

Take care of the right wrist, or you will spin round and twist off.



By means of this exercise the wrist is very much strengthened, and the power of the grasp increased.

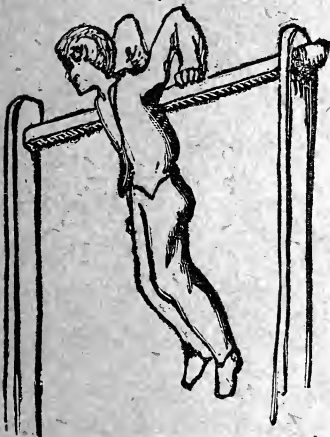
#### THE L ROLL.

Hang on the bar, forming the letter L.

Now, bring the feet through the arms, as has been already mentioned, but keep the knees straight all the time.

#### THE GRASSHOPPER.

Sit on the bar, and hold firmly with one hand on each side, points of fingers to the front.



Let yourself gradually slide forwards until the bar crosses the small of the back, and the elbows project upwards something like the legs of a grasshopper.

Then draw yourself up again, and assume your sitting position on the pole.

This is about the most difficult exercise that has been mentioned, and tries the shoulders marvelously. But it should be learned, for it is very useful.

#### STANDING ON THE BAR.

Sit astride the bar, and place both hands on the bar, just in front.

With a sudden spring, bring both feet upon the bar, the feet crossing each other at the heels; at the same time raising the body to an upright position.

It is not strength that is required in this exercise so much as a good balance and presence of mind.

Another mode of standing on the bar is that which has already been mentioned in the Parallel Bars, viz., by placing one foot on the bar, hitching the other under it, and drawing up the body by the latter foot.

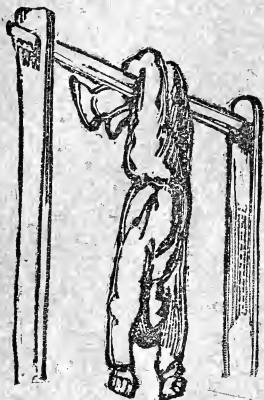
#### HANGING BY THE LEGS.

Sit on the bar; then suddenly slide backwards and drop, catching yourself by your bent knees.

Be careful to drop quite perpendicularly, and not to communicate any swing to the body, or the legs may be unhitched and the gymnast come down on his nose.

When the young gymnast can hang by both legs easily,

let him take one of them from the pole, and remain suspended by the other. He should not (as some teachers recommend) catch the instep of the suspending foot with the knee of the other. There is quite sufficient force in the one knee to hold him up, and if he keep it tightly bent, there will not be the least danger of its unhooking.



#### HANGING BY THE FEET.

We now proceed to a more ambitious performance, namely, that of suspending the body by the feet instead of the knees.

Hitch both insteps over the pole, forcing the toes upwards as much as possible.

Then loosen the hands from the pole and let the body hang perpendicularly, without a jerk or a swing.

To raise the body again is not so easy, but it can be done with a little practice. But the

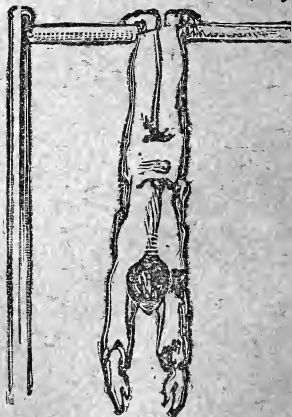
neatest way to leave the pole when in this attitude is, by dropping to the ground on the hands, and so letting the feet come to the ground.

#### HANGING FROM THE TRIANGLE.

If you have nerve, here is something wherewith to astonish the natives.

Sit on the bar, folding your arms. Then throw yourself a regular somersault backwards, as if you meant to throw yourself out of the triangle.

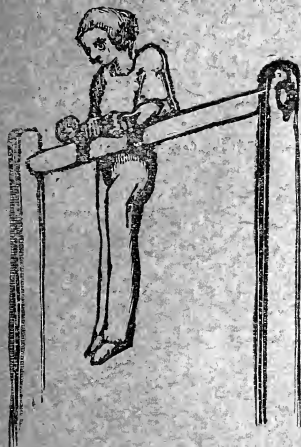
But as you come over, spread the legs so that the feet catch against the ropes. Let them slide down the ropes, and you will be held by your insteps at the angle formed by the union of the ropes and the bar.



I once saw a man perform this exercise in a triangle raised fifty feet in the air. It had a most startling effect, for, as he turned over, it seemed as if he must be inevitably dashed to pieces.

## THE ARM CHAIR.

Spring upon the bar, and support yourself upon the fore-arms, as shown in the cut.



This is rather a trying exercise.

## KISSING THE BAR.

Another difficult exercise. Raise yourself on the bar, as before mentioned, until the bar crosses the waist.

Sink gradually down, until you can touch the bar with your lips, and then raise yourself again.

## THE WOODEN HORSE.

THE series of horse exercises is extremely interesting. The performers always like the horse exercises, and bystanders seem to appreciate them even more than those on the horizontal bar.

There is more scope for change of attitude than on the bar, and the legs are exercised as much as the arms; in some of the feats much more so.

## CONSTRUCTION OF THE HORSE.

The wooden horse is made of a great cylinder of wood, generally part of the trunk of a tree.

It is mounted on four posts for legs, which are either driven firmly into the ground or fastened to a strong framework, so that no amount of force will push it over.

A saddle should be placed on the back, rather nearer one end than the other, which saddle should be made of stout rough leather, and nailed firmly in its place.

Two pommels, made of wood, and covered, if desirable, with leather, should also be placed on the horse, and the hind pommel should be rather higher than the other.

A shallow pit, of a few inches in depth, and some four feet square, should be dug in the off-side of the horse, and filled with sawdust, on which the gymnast may alight after some of his lofty leaps, or into which he may chance to tumble, should he miss his mark.

The paving on the near side should be of sand if practicable, or very fine gravel.

Many gymnasts like to have a spring board from which to leap, and I rather recommend it.

The board should be made of several narrow boards, placed side by side, and firmly nailed to stronger pieces that lie across them.

On the center of the board should be fixed a piece of leather or carpet in order to afford the feet a firm hold in jumping.

Each end of the board must be supported on wooden blocks, so as to give it space for springing. If the ground is hollowed under it, the same result will be attained.

The height of the horse is regulated by that of the gymnast, the top of his nose affording an accurate criterion; for the top of the saddle ought just to come up to that feature.

#### MOUNTING THE HORSE.

Stand on the near side of the horse, placing one hand on each pommel. Then spring up, and bring the arms straight, so that the body is supported by the hands, while the legs rest lightly against the horse.



After remaining for a few moments in this attitude, jump to the ground and up again immediately. Continue to practice this jumping, until it can be done easily, and remember always to come down on the toes.

When you can jump up and down six or seven times successively, make a rather higher leap than usual, throw the right leg over the saddle, removing the right hand to let it pass, and then you are fairly mounted.

Practice mounting both ways; it's only a wooden horse, and does not feel insulted even if you do mount with your face to his tail.

#### DISMOUNTING.

To dismount properly and neatly, place the left hand on the fore-pommel, and the right hand on the saddle.

Raise yourself a little on the hands, and throw yourself off, coming on the ground nicely on your toes.

#### SUSTAINING THE BODY.

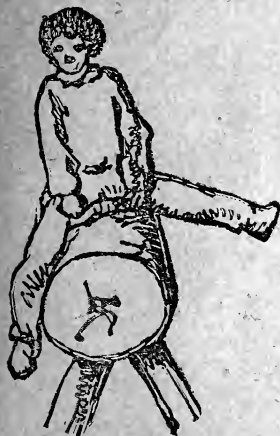
Spring up as in the preliminary exercise, arms stiff and legs straight.

Now throw yourself a little away from the horse, and bring yourself back again by the arms, without suffering the feet to touch the ground.

This is a useful exercise to prepare oneself for a real horse that starts away as it is being mounted.

## KNEE PRACTICE.

Place both hands on the pommels, then leap up and kneel with the right knee on the saddle.



Leap down, up again, and come with the left knee on the saddle.

Afterward kneel with both knees, taking care not to go too high, as you may chance to topple over ignominiously.

## THE KNEE LEAP.

But as it is possible that you might so err the following exercise will teach you how to escape the danger of a fall.

Leap up with the knees on the saddle. Lean well forward, and, with a bold spring, clear both legs of the saddle and come to the ground.

There is not the least difficulty about this exercise, although when it is first attempted the legs feel as if they were secured to the horse. Only daring is required, and after doing it once you will do it afterward with perfect ease.

## LEG THROUGH ARMS.

Hands on saddle as before. Now leap up well and pass the right leg clean over the saddle between the arms.

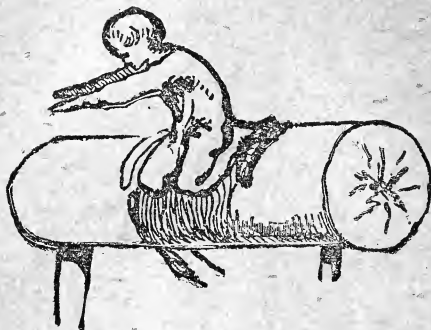
Make a slight spring from the arms, withdraw the leg and arms to the ground, immediately springing up again and passing the left leg through the arm.

Let the unused leg hang down easily, and keep the body upright. A stooping attitude has a most awkward effect.



## SWINGING PRACTICE.

Mount, but instead of seating yourself in the saddle, do so behind it



Now place the left hand on the fore-pommel, and the right on the hinder, as in the engraving, and swing the body completely round, so as to seat yourself *before* the saddle, your face looking toward the hind pommel, and the feet not touching the ground at all.

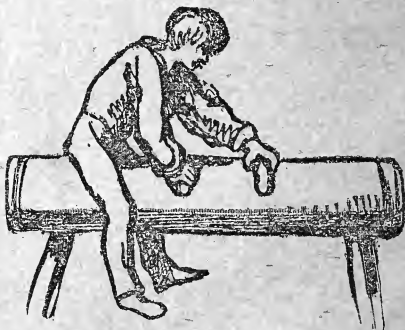
Then change hands and swing round again, so as to bring yourself into the position in which you started.

This is very useful exercise for developing the power of the arms.

## KICKING THE SADDLE.

Hands on pommels. Jump up and bring the toes to the top of the saddle, as in the illustration.

Afterwards go a little higher, place the soles of the feet on the saddle, let go the pommels, and come up standing erect on the horse.



## ARM PRACTICE.

Mount. Place the hands on the front pommel and raise the body as high as you can. There is not the least danger of going too high.

When you can thus suspend yourself for a short time, try to do so while you swing your body gently.

Lastly, raise yourself up as before, and slap the soles of your feet together over the top of the saddle.

## CROSS PURPOSES.

Which cannot happen accidentally.

Mount, and, placing both hands on the front pommel, swing yourself as high in the air as possible, crossing your legs at the same time, and twisting the body so as to seat yourself again on the saddle, but looking in the opposite direction.



Having done so, swing up again and resume your former position.

A very decided swing is required here, or you will kick your shins with your own heels, which is one of the most irritating of occurrences.

## THROUGH THE ARMS.

Hands on pommels. Take a good spring, and bring yourself completely over the saddle, passing through your arms as you do so.

When your feet are well clear of the horse, give an impulsion with the arms, and alight on the ground neatly.

This is very effective exercise, and does not require so much strength as boldness.

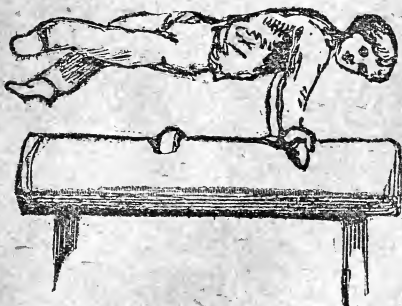
If you hesitate, down you go.

## SIDE SADDLE.—No. 1.

Stand with the right side to the saddle, hands on pommels. Spring up well, and throw the right leg into the saddle, lifting the left hand to let the leg pass, but retaining the hold of the other hand.

Dismount, and instantly leap up again; but mount with the left leg, removing the right hand.

Persevere in this, and then proceed to the next, which is more difficult, and requires a neater balance.



## No. 2.

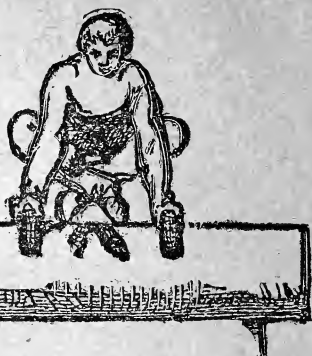
Hands on pommels. Leap up, and throw both feet com-

pletely over the body of the horse, and seat yourself behind the saddle, as is here shown.

Down, and, with a spring, seat yourself in the same way on the front of the saddle. -

Take care not to put on too much steam, or you will slide over the horse and come down in the sawdust; while, if you do not put on enough, you will come slipping backwards, doubled up in an absurd fashion.

Do it at first with the aid of a short run, but afterwards with a simple jump.



#### THE VAULT.

Hands on pommels, and throw both legs completely over the back of the horse, as in the cut.

Practice the vault first with the feet to the right, then to the left. Indeed, all these exercises should be so practiced, or they will

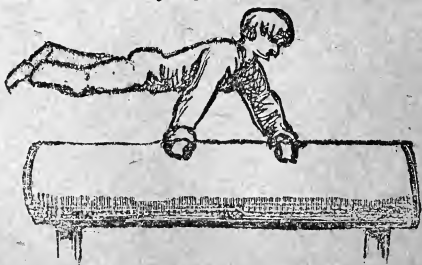


not develop both sides of the body equally.

#### SIDE-SADDLE

##### LEAP.

Spring up as in Side-Saddle No. 2, but let the legs pass completely over the horse, while the knees are kept straight, the body erect, and one hand on the back pommel.





## THE BACK VAULT.

Sit behind the saddle, placing both hands on the hinder pommel.

Raise the body on the hands, and with a powerful effort of the arms, throw yourself clear off the horse.

## THE SINGLE HAND LEAP.

Try to leap into the saddle, while one hand only holds the pommels, and the other hangs quietly by the side. First right hand, and then left.

## THE SOMER-SAULT.

Take a short run, put both hands on the pommels, and fling yourself fairly over, not loosing your hand of the

pommels, until the feet have well passed the center of the horse.

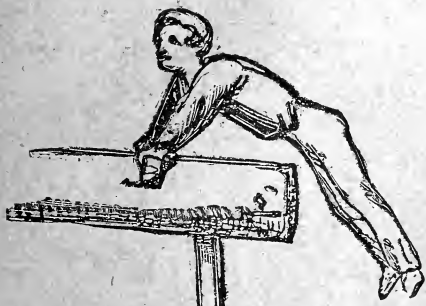
Don't be afraid. If you only hold on well by the pommels, you must come down properly. There is no need for a very powerful swing, for the best gymnasts come over quite slowly.

## THE DOUBLE SOMERSAULT.

This exercise I believe to be my own special invention, and I never saw any one who could do

it except the inventor. But there is no reason why every one should not learn to do it, for it merely depends on the exact preservation of balance.

Go over the horse, as in the preceding paragraph, but do



not loosen the hold of the hands when you come to the ground.

Your attitude will be now rather curious, the back bent like a bow, the head falling backwards, and the hands over the head.

Now make as powerful a spring as the legs can achieve, and with the arms draw yourself over the horse again, thus performing exactly the reverse of the forward somersault.

There is a slight error in the engraving, for the fingers ought to be turned inside the saddle, and not outside it, as shown by the artist.

In rolling over the saddle, the head is bent forward, or the nose would get a sad scrape against the back of the horse.

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## PEDESTRIANISM.

### DESCRIPTION OF PEDESTRIANISM.

By PEDESTRIANISM is understood, in racing parlance, the contest between two or more men, or between a man and time, in walking, running, leaping, vaulting, etc.

IN QUICK WALKING, which is the only kind useful in racing, the body is inclined forwards, and the heel touches the ground before the toes, which next receive the weight. As the former is raised from the ground by the straightening of the ankle, at the same time projecting forward the whole body, the toes come under the center of gravity and receive the weight; and as the body is still further pushed forward, the other leg swings by its fellow; and before the toes of the first are raised from the ground, the heel of the second reaches it. Hence, this is called walking "toe-and-heel." In this kind of walking, from 180 to 200 steps per minute are usually taken, according to the distance to be walked; and in very short sprints, with small, quick, and active men, fully 220 steps are the average per minute. From 6 to 6 1-4 miles per hour is the outside rate of walking, except in very extraordinary pedestrians, who, some years back, walked 7 miles per hour; and, in a match, have completed 1 mile in 7 minutes 13 seconds, 2 miles in 15 minutes 20 seconds, and 4 miles in 32 minutes exactly, which, if correct, is the fastest time on record. There was, however, great doubt as to the

fairness of the walking. The great art is to keep the knees supple and not too straight, and to make use of the arm as a balance spring, or even as a kind of fulcrum; but in this respect walkers vary a great deal, some use great action of the arms, while others keep them as still as if they were glued to their bodies.

RUNNING is a different action to walking, being, in fact, a series of small leaps, with one foot at a time, and each alternately, whilst hopping is with one foot only. The upper part of the body is inclined forwards, the head well up, and even a little back, except in running "sprints." The breast is well expanded, and the shoulders thrown back, with the arms raised, the elbows bent, the fingers clenched into the palm of the hand, and the whole upper extremity as rigid as possible, in order to allow of the auxiliary muscles of respiration acting with their full force. There is a great variety in the use and action of the legs in different runners; most, however, keep their knees rather straight, and almost graze the ground with their feet; the tread is on the balls of the toes, and slightly also on the toes themselves; and the spring is made rapidly from one foot to the other, each passing its fellow and taking its turn with great rapidity; at the same time there is a very slight movement of the arms in unison with the legs, but scarcely visible except on close inspection. Good wind is as great a requisite as good legs, and no one should attempt a running match unless he has a full volume of lungs, and a sound and strong heart. The best time in which the various distances have been done is as follows: A quarter of a mile in a minute; half a mile in 2 minutes down-hill, or 2 1-4 minutes on level ground; 1 mile in 4 1-2 to 5 minutes; 2 miles in rather less than 10 minutes; 4 miles in 20 1-2 minutes; 10 miles in the hour; 15 miles in 1 hour 35 minutes; and 20 miles in 2 hours and a quarter. Pedestrians have walked 1,000 miles in 1,000 successive hours; and lately the feat has been exceeded, by doing 1,000 half-miles in 1,000 half-hours.

THE CONDITIONS of walking matches are generally in writing, specifying that the man or men shall start at the dropping of a handkerchief, or other signal agreed upon; and that the walker must keep to a fair "toe-and-heel walk"—that is to say, that either the toe of one foot or the heel of the other must always be in contact with the ground. An umpire on each side is appointed, who follow the men closely, and if either exceeds the "toe-and-heel" walk by running (in which case there is a moment when both feet are clear of the ground), the umpire named by his opponent calls to him to turn, and he must do so or lose the match, unless the order of the one umpire is disputed by the other, in which case

the referee, who has also been appointed by the umpires, decides between them. On being called upon to turn, the walker must turn completely round, and also alter his mode of walking, or he is again called upon to turn, and thus equally loses the match by the necessity for constant turning. The distance and ground to be walked over are also fixed by the articles.

IN RUNNING MATCHES there is no necessity for conditions, except to specify the ground and the distance, as well as to name the umpires. &c.

LEAPING is effected by a sudden contraction of the legs, followed by a still more sudden and jerking extension of all the joints, by which the body is projected into the air clear of the ground. It may be either from a standing position or with a run, and both may be over a height or across a width. Vaulting is leaping with the assistance of the hands, and in addition sometimes the aid of a pole is called in, termed "the leaping-pole." In all leaps, besides those of the lower limbs, the whole of the muscles of the body are violently in action, and especially those of the abdomen and back.

IN THE STANDING-LEAP OVER A HEIGHT the legs are brought close together, the knees are considerably bent, the hips are thrown back and the shoulders forward, with the head well up. The arms are slightly and slowly swung backwards and forwards, the body sinks till the calves touch the back of the thighs, and then by a rapid extension of all parts in unison with the swing of the arms, the body is projected over the height to be cleared, and descends upon the toes and ball of the foot, with the legs bent, in order to form a spring to break the fall. In this way some men can clear the height of their waists.

THE STANDING-LEAP OVER A WIDTH is effected in the same way, but with less contraction of the limbs, and more swinging of the arms. The greatest I have ever known thus cleared was 14 feet.

THE RUNNING LEAP OVER A HEIGHT requires a start of about 9 to 12 paces. The take-off should be at the distance of half the height of the object to be cleared, and the legs should be well drawn up in front of the belly during the spring. In this way, and by a trick of throwing the legs into a horizontal position, some men can clear an object higher than their heads. With the aid of a spring-board and a descending run three times this height has been surmounted.

THE RUNNING LEAP OVER A WIDTH will be better managed with a run of about twenty paces, and the steps should be very quick and short, increasing in these points up to the moment of springing, which is from the very edge of the

space to be cleared. The jumper comes down either upon his heels in a very wide leap, or upon his toes in one where his whole powers are not exercised. On level ground 21 1-2 feet have been cleared to my knowledge, and 22 feet are said to have been done.

HOP, STEP, AND JUMP, is a very common kind of contest in leaping, and is conducted as follows:—"A starting point" is marked off, then, 10 yards further, another, called "the spring." The players are ranged in line on the first, and must run to and start from the second, when the one who can cover the most ground by one long hop, one long step, and a similar jump is the winner.

VAULTING is effected by leaping with the aid of the hands, from a standing position or a very slow run or walk. The vaulter stands in front of the gate or bar and springs upwards, placing his hand on the top; in this way he swings his body over, lifting it by a muscular effort of the arm and shoulder still higher than the legs alone would carry it, and then guiding it by the aid of the arms it is dropped gently on the feet beyond the gate. Sometimes the vaulter throws the body obliquely over the gate, using one hand and arm only, and sometimes through both arms. By vaulting a man can easily clear his own height, and often considerably more.

THE LEAPING POLE is either of fir or bamboo, about two, three, or even five feet higher than the height of the party using it, and becoming stronger towards the bottom. When used for leaping wide ditches, a pole with a flat disk of several inches diameter at the bottom is of great use in preventing its sinking into the mud, and in peaty bottoms often saves a ducking. The pole is thus used: The right hand is placed at the height of the head, and the left on a level with the hips; then grasping it firmly, it is dropped into the ditch till it touches the bottom, when making a spring with the left foot the weight is carried upon the arms, and describes a segment of a circle, the center of which is at the end of the pole in the ditch. In thus swinging over, the body passes the pole, and from facing the side to which it springs, it changes to facing that from which it sprung. The leap should be made the moment the pole touches the bottom, and too much weight should not be carried upon it. The learner should begin by clearing small ditches, gradually increasing their width, and when expert in these, try wider ones until he cannot proceed further without a run; then venturing upon a few yards' preparatory run, which will give additional power in clearing space; and finally adopting a good quick run of about six, eight or ten yards, gradually taking hold of the pole higher and higher as he increases the width of his jump.

In leaping over high objects it is only necessary to fix the attention upon the gate or bar to be cleared, and endeavor to surmount it by an effort of the legs; at the same time raising the weight by the arms on the pole while in the air, and reversing the position as in jumping over a ditch. At first there is some difficulty in managing the pole over the object, but to effect this, the leaper at the time of crossing the bar, and just when he is beginning to descend, must draw the pole upwards and raise the lower part with his one hand while he depresses the upper part with the other; by which action the pole is tilted over in unison with the body, and the small end reaches the ground first. When the leap is to be a very high one indeed, the leaper leaves his pole on the taking off side, quitting hold of it as soon as it touches the bar, or rather just before that time.

## TRAINING FOR PEDESTRIANISM AND OTHER PURPOSES.

### SECT. 1.—PREPARATORY TREATMENT.

GENERAL REMARKS.—It is an indisputable fact that no animal is so much improved by training as man—none stands such long and severe preparation with advantage—and none displays the difference between condition and its absence in so great a degree. Next to him in this respect stands the thorough-bred horse, which certainly displays these attributes almost to the same extent; but still the advantage is in favor of man, who can sustain without injury repeated trials of his powers to their utmost limits—whilst even the thorough-bred horse requires the greatest care, lest by continual and constant work his speed, and what is still worse, his temper, should be ruined. But it is not only that man may be enabled to do certain feats of activity and strength that training is desirable, but that he may do them with pleasure to himself, and even with advantage to his general health; and this marks the grand principle which every man who values health should constantly keep in view, namely, that no one should attempt to compete in any contest requiring agility or strength, unless he has had such a preparation as shall enable him to perform his task without feeling any ill effect from it.

For instance, the man in condition can row through a race of three or four miles, in which his whole powers are taxed to their very utmost, and shall, at the end of it, be almost blind from the exertions he has made; and yet before he gets out of the boat he is “all right,” and could go through the same in half an hour without injury—whilst the man out of

condition lies nearly fainting, or perhaps quite insensible, for many minutes, or even still longer, and is only revived by stimuli to an extent which will not allow any further liberty to be taken with his naturally strong constitution. Pluck will do much in place of condition; but numberless are the instances of ruined health from the excessive drafts which have been made upon this valuable quality, whilst a little care and abstinence would have prevented any such irreparable misfortune. To enable a man who is of sound constitution—but, from mismanagement, out of health—to restore himself to such a state as will allow him to go into training without mischief, is rather a difficult task in most cases, because it not only requires some skill to know what to do, but also great self-command to avoid that which ought not to be done. In the vast majority of instances the health has been impaired by excess of some kind, and in many by every variety of excess which human ingenuity can suggest.

But it is wonderful how completely the anticipation of an Oxford and Cambridge match at Putney, a pedestrian match, or any similar contest, will enable a "fast man" to throw all temptation on one side and to adhere to all the rules laid down for his guidance with the rigidity of an anchorite. His reply to all tempting offers is, "No, that is bad training." Such is not always the case, it is true; but to a great extent, and more pluck is frequently shown in abstaining from temptation than in sustaining the prolonged efforts which such a race demands. There are two kinds of excess in eating, drinking, etc., and excess in literary and other sedentary pursuits. Either will for a time upset the powers of the stomach, and in fact of the whole system, and each will require very different treatment in order to restore those powers. These conditions will also vary very much according to the rank in life, habits and natural constitution of the individual. For instance, a gentleman's son, having been generously brought up, goes to the university and indulges to excess, in wine, smoking, etc., all the while taking strong exercise. For a time his naturally strong constitution enables him to withstand the attacks of the poisonous doses of wine and tobacco which he is taking, but soon his hand begins to shake, his appetite for solid food ceases, his eyes become red, his sleep is restless and unrefreshing, and he is threatened with an attack of delirium tremens.

Now, if in such a state as this an attempt is made to go suddenly into training, the consequence is, either that the above disease makes its appearance at once, or, in milder cases, that the stomach refuses to do its duty, and the prescribed work cannot be performed, from giddiness, faintness, sickness or headache. By a little care and time, however, this

state of things may be removed. But suppose the case of a young man in a lower rank, who has been brought up on a spare and rigidly abstemious fare, and who from circumstances is suddenly allowed to indulge in all the temptations of the public-house; he has no other resource—no hunting or cricket to take up his attention—no lectures to attend, and the consequence is that beer and tobacco commence the day, and tobacco and spirits wind it up. Such a man suddenly finds all his energies going, his mind dull and enfeebled, his body weak, flabby and bloated; in a happy moment he bethinks himself that he will take to boating, or some other amusement which he has formerly perhaps been addicted to, and at once proceeds to the river or the road. Well, what is the consequence? Why, instead of feeling the better for the exertion he is completely knocked up, and perhaps permanently discouraged and deterred from any further trial; in fact he requires a much more careful treatment to get him into a state of health fit for such an exertion than the Oxonian or the Cantab, because the change from his former habits has been greater, because the imbibition of beer and spirits has been more uninterrupted, because the rooms he has frequented have been less perfectly ventilated, and because he has taken little or no exercise.

Indeed, it is astonishing what quantities of intoxicating drinks may be imbibed without much injury, provided that a corresponding amount of exercise is regularly taken. I have myself known young men take from one to two gallons a day of strong ale for many months, besides occasional bottles of wine, &c., without any great injury. One of the most plucky oarsmen I ever knew regularly swallowed the above quantity, and still pursues the same course, apparently uninjured by it. This gentleman, however, is always walking or riding; and is also by nature of an iron constitution. But a far more difficult task lies before the reading man, who has been devoting 12 to 18 hours a day to a preparation for honors; and who, finding his health giving away, determines upon going in for honors of another kind. Here the nervous system has been overtaxed, aided by green tea, wet cloths round the head, and perhaps a liberal supply of tobacco; the consequence is that the neglected muscular system is unfit for exertion, and the limbs become stiff and cramped on the slightest effort. This state of things requires many weeks, or even months to restore the system to a state fit for undertaking any severe work, because the muscles are wanting in solid material, and the nervous system is so irritable as to be totally incompetent to stimulate them with that steadiness and regularity which is essential to success.

The same state of things often occurs in the counting-



house. A young man is confined for ten or twelve hours a day to the desk and ledger; he has no time for exercise, and his nervous system is over-stimulated by incessant calculation, and also by the constant view of the white paper spread before his eyes; he gets the "ledger fever," and many a young man is rendered by it utterly incompetent to continue this kind of drudgery. Some relieve this unnatural condition by early rising and pedestrianism, or horse and rowing exercise. This plan, if carefully entered upon, is of great service; but it requires some caution at first, and is almost wholly useless if persevered in without those essentials which I shall endeavor to point out.

TREATMENT OF THE FREE LIVER OF ACTIVE HABITS.—I have already observed that the free liver who has usually taken a due amount of exercise, has a comparatively easy task, if he only has the power to command himself and to check those practices which he has been indulging in. But let this be done with due caution. Many is the man who has been driven to *delirium tremens* by suddenly leaving off all stimuli. The best plan is to substitute ammonia in some shape for a part of the accustomed alcohol, and for this purpose to take the following draught once or twice a day, or oftener if that dreadful sinking sensation comes on which is so distressing to those who have indulged to excess in wine or tobacco: Take of aromatic confection ten grains, sal volatile one drachm, bicarbonate of soda five grains, tincture of gentian one drachm, water one ounce—mix.

The quantity of beer, wine, or spirits should be diminished one half every two or three days, until brought down to the allowance to be hereafter fixed for training purposes; tobacco should be totally eschewed. I have invariably found that total abstinence from smoking is easier than temperance. There is not the same danger in leaving it off as is the case with wine, spirits, or beer, in fact there is no danger whatever in so doing; whilst in alcoholic drinks the reverse is the case. My advice, therefore, is in all cases where the constitution has been impaired by smoking and drinking, to give up the former at once and entirely, but to be very careful in gradually leaving off the latter. With regard to the kind of stimulus which should be adopted, much must depend upon the previous habits. In most cases, when the stomach is not much upset, malt liquor will suffice; and, if sound and unadulterated, is the most wholesome beverage; but in many cases it will not do to leave off suddenly wine and spirits, and adhere to malt alone. In such cases an occasional glass of brandy and water, or claret must be allowed. The latter, where it

agrees, is an excellent wine for the purpose of gradually lowering the stimulus.

No wine suits the nervous system better, and, if mixed with soda-water, it may be drunk to a considerable extent by those who have accustomed themselves to a stronger stimulus. When the stomach is very much disordered, it may be mulled and taken warm. It is not good while in training, but as a preparative for that process it is exceedingly valuable. Those who have been smoking and drinking to excess, have stimulated their kidneys and skin to secrete a greater quantity than is natural to those organs. This is an effort of nature to get rid of the poison which has been absorbed into the system, but the effect does not immediately cease on the removal of the cause. Hence the thirst continues, and some liquid must be given to quench it. It is for this purpose that I advise claret and soda-water to those who can afford it; or to those whose pockets will not allow this luxury, porter or bitter beer mixed with soda water in equal proportions. Great care must be taken in all these cases in the exhibition of purgatives. No free liver is able to bear strong aperient medicine without some injury to the system, and although very commonly given, it is a practice which ought to be very cautiously adopted. If the liver is acting well (which may be known by the yellow or brown color of the faces), a simple black draught may be taken, consisting of half an ounce of sweet essence of senna, with a small tea-spoonful of salts dissolved in an ounce of warm water; or one or two compound rhubarb pills may be taken at night.

If, on the contrary, the motions are of a clay color, 5 grains of blue pill should be taken at night, followed by the above draught in the morning. Should the bowels be relaxed, and inclined to act more than once a day a wine-glassful of decoction of bark, with a teaspoonful of the compound tincture of bark should be taken two or three times a day. If very loose, 20 or 25 drops of laudanum may be added to each dose; and if very watery, with griping pains 25 to 30 drops of diluted sulphuric acid may also be given with it. This will almost always check the diarrhoea, and is also useful in giving tone to the stomach and producing an appetite; but if more severe remedies are required, the aid of a medical man should be sought for at once. During the time in which this plan of proceeding is having its effect, it is of the greatest consequence that the mind should be occupied, or rather amused, in some way. This point cannot be too much insisted on, for upon it depends in great measure whether the attempt to restore health to the body shall be successful or the reverse. There is no point more

neglected, both in the preparation for training and in the actual period of severe work, than this, and yet it is really the one which ought most to be inculcated. In the first place, bodily exercise without amusement is mere drudgery; it tires, but does not lead to a restoration of power; whilst if given with some mental excitement, the fatigue is scarcely felt, and what little is experienced is speedily followed by a reaction which asks for more work of a similar character and tendency.

Let any one contrast the effects of a walk or ride, without object or companion, with either the one or the other when taken for the purpose of making a call, or any other specific object, especially in company of an amusing companion. From the former (called a "constitutional" because it does *not* benefit the constitution), he has returned jaded and out of spirits, whilst from the latter he has experienced an amount of exhilaration varying of course with the nature of the object and the agreeability of his companion. Nothing conduces more to a successful prosecution of this plan of self-treatment than the mutual agreement of two persons whose object is the same, to assist one another by their example. Let two persons agree in earnest to restrain one another when tempted, and also to amuse one another by sparring, or fencing, or riding, or walking together—or, indeed, any kind of gymnastic exercise. This will aid the purpose of both, as far as the restoration of health is concerned, and they will also find it much more easy to "put the stopper" upon each other than upon themselves. Even if they are not both going into the same kind of training, the preparation for all kinds is the same, the grand object in all cases being to leave off injurious food and drinks, to avoid smoking and venery, and to take sufficient exercise, conjoined with amusement, to tire without prostrating the muscular system.

During this period the diet should be plain, but varied. Roast beef and mutton, or chops and steaks, with any vegetables that agree with the individual, may be indulged in. Poultry, game, and fish, are not injurious; and even pastry, if good and plain, will do no harm whatever. It is better to put off the period of rigid dieting to the actual time of training, as the stomach will seldom bear it for any length of time. In the present day, it is scarcely necessary to inculcate the free use of cold water every morning. It is not desirable to bathe during this time, though in warm weather a mere plunge into a river, or, better still, the sea, is very serviceable; but at all seasons the whole body should be sponged every morning, using in very cold weather water at the temperature of 60 or 65 degrees of Fahrenheit. The body should be well rubbed with a wet cloth, until a glow is

produced; and the aid of an assistant is here very beneficial. If re-action is speedily produced, a calico shirt may be worn; but if otherwise, flannel in the winter should be put on under the shirt. This, however, is seldom necessary, since those who are so delicate as to require it are seldom fit to go into training. Such is the comparatively easy task of those who have continued to take strong exercise, concomitantly with their free indulgence in wine, tobacco, and all their little et cæteras.

THE TREATMENT OF INDOLENT, FREE LIVERS, who have indulged themselves in the same way, whilst at the same time their bodies have been wholly idle, or they have only gone to the limits demanded by the necessity of seeking for the gratification of their appetites, is much more difficult. In such a case very strong control is required, and unfortunately it is in such persons generally absent. Few young men indulge themselves in this way unless they are of a weak and yielding nature, easily led away by importunity, and unable to resist temptation. Many men of strong mental and bodily power have been led into a course of dissipation; in fact, they have not been led, but in the impetuosity of their temperaments have rushed into it. These natures have only to resolve and the thing is done. But far different is it with the man of perhaps herculean body, but weak and vacillating mind. He, alas! resolves and breaks his resolution forty times a day, and is at once an object of pity and contempt. Such a man may be restrained by a master mind, but rarely has he the power to control himself.

The sight of a public house is too much for him, and he cannot resist the temptation it presents. But though, if taken in hand by another, he may be made use of for a time, he is rarely worth the trouble he gives, as the slightest want of vigilance leads to an outbreak which upsets all the good effects of the previous careful supervision. The great difficulty here is to find amusement for the body and mind—the habits of intemperance and idleness have led to a dislike of all exercise, or rather, perhaps, in many cases the natural indolence of body and mind has led to habits of intemperance. If, however, it is desired to effect the change by means of this supervision, it must be as gradual as in the former case with regard to diet, and much more gradual and careful with reference to the kind and amount of exercise. It sometimes happens that a good-natured and easy tempered man has given himself up to excesses and idleness, and yet being a good oarsman his services are demanded for his college or university boat. Here some trouble may be spent in restoring him; but such a case is the only one in which it will be repaid, and even then it is a hazardous experiment; the only plan

is to hand the poor fellow over to some one person, who is likely to exercise a firm, yet quiet control over him; and to inculcate over this person the necessity of carefully watching his *protege* at all hours of the day and night.

He should walk, ride, etc., with him; beginning by short distances and gradually increasing them. Let him by all means take him to ball matches, coursing meetings, races, etc., or any kind of out-door sport which is most likely to occupy his attention, and at the same time to keep his body gently exercised without exhaustion; then get him home, and after a moderate dinner, and a game at billiards, chess, or cards, for an hour or two, if possible let him be persuaded to go to bed. Here it is not desirable that the hours of bed should be shortened; let him lie till nine or ten in the morning, because he will from his previous habits require longer rest than the average time, and because there is already great difficulty in occupying the hours of the day, so as to keep him out of temptation. In this manner these two classes of men may be restored to health, or at least to such a state as will fit them to undertake the severe work and strict dieting which training for such a match will require. Both are likely to be considerably stouter and heavier than the weight at which they will be best able to exert their powers; but this is not always the case, as it sometimes happens that the man who has been indulging to excess in every kind of temptation has lost weight to a considerable extent, and regains it on submitting to the loss of those stimulants which have upset his stomach.

**THE OVER-STUDIOUS MAN.**—Before proceeding to the treatment of the over-studious, let me earnestly remind those who are desirous of excelling in literary pursuits, that without bodily health the mind is unfitted for exertion in acquiring knowledge. It is true that many men who have already stored their brains with facts, are enabled, even after becoming complete valetudinarians, to impart knowledge to others; but no one can grapple with difficulties for himself while in that state; much time is often lost, and strength squandered, through over-anxiety in reading; but I am fully and firmly convinced that if eight, or, at most, ten hours a day are well employed—that is to say, if any man really works hard during that time—he will have done all of which his mental powers are capable. This will leave him seven or eight hours for sleep, and six or seven for meals, exercise, etc. Few men, however, of ardent temperaments and studious habits are capable of thus portioning their time; but they may depend upon the fact that, beyond the hours that I have named, they will gain nothing by poring over mathematical problems or classical authorities. If this advice were

acted up to, there would be no occasion for the directions I am about to give; but, from the constitution of the human mind, it is not likely to be followed in many cases.

It is needless for me to remark, that in a mind upset by literary study or mercantile accounts, the best plan, if practicable, is to give up reading and writing entirely, for a time; but this is seldom to be effected; and if not, all that can be done is to improve the health of the body as much as possible whilst the strain upon the mind continues. In the case of a man who can arrange his own hours of study, and has only a certain object to effect by a given time, I should strongly recommend him in no case to exceed eight hours a-day, and, if possible, not more than six. This will leave him ample time for the prosecution of any bodily training which he may require; and if the health has not been much impaired, and the constitution is naturally strong, he will find that in proportion as he is able to increase the amount of bodily exercise, so will his mental powers recover their tone. But to proceed to details. Few reading men determine upon preparing for a course of training until they are a good deal upset by confinement, and in them some little care is necessary. First and foremost, I should insist upon their giving up smoking, green tea, and coffee, except at meals.

There should be no over-stimulation of the brain; but what work is done should be done without any unnatural stimulus. It will be found a very good plan to have two reading-desks—one of a height for sitting to, and the other adapted for standing. Then, when drowsy or unable to fix the attention to the sitting desk, let the change be made to a standing position; and in this way the necessity for green tea, or wet cloths to the head, may be avoided. Next, I should advise that the hours of study should be divided into two equal periods—the first commencing immediately after breakfast, and the second immediately after tea. In this way all the middle of the day may be given up to recreation, dinner and exercise: and the following hours are those which I should lay down as the most proper, though of course they may be slightly varied to suit particular circumstances: Breakfast, at 8: reading, 8.30 to 12.30; light lunch, on biscuit or sandwich, and glass of bitter beer, or sherry and water; exercise, from 12.30 to 4.30; dinner at 4.30; relaxation of body and mind till 6.30, when take a cup or two of coffee or black tea; then read for two, three or four hours, according to circumstances. Then go to bed. When first these hours are adopted the exercise must be very gentle, and of an amusing character: if on horseback, so much the better, though this kind of exercise is not sufficient for the

purpose of training, except as a preparation for walking or running.

Many men are enabled to indulge in a nap after dinner with advantage to themselves; but generally speaking it is prejudicial. If, however, the mouth feels moist on waking, and there is no palpitation of the heart or flatulence, I am strongly of opinion it does good rather than harm. It is the natural instinct of all animals to sleep after eating, and certainly it is that of man. The reason why sleep after dinner is said to disagree with everybody is that it is so often interrupted that it seldom has fair play. Now disturbed sleep we know to be prejudicial at any hour, and if it cannot be obtained without much chance of interruption it is better to avoid it altogether. If, however, an hour, or rather more, can be devoted to a nap, and it is found to agree with the individual trying it, the mind will be refreshed as well as the body, and after a cup of tea or coffee the studies may be prosecuted with renewed vigor. Thus I have shown how the studious man can devote sufficient time for the purposes of preserving or restoring his bodily health, and, as we shall hereafter see, enough also to allow him to go into training for any ordinary competition in rowing or pedestrian exercise. Now with regard to the counting-house clerk. Here the hours are fixed, and all that can be done must be done before 9 or 9:30 A. M, or, in the summer season, after office hours; nevertheless, men have trained themselves in spite of these difficulties, but it is arduous and up-hill work. In the winter season there is no light before eight o'clock, and consequently it is quite out of the question to attempt anything in the way of regular training. Health, however, may be preserved and reparations made for training during the summer.

For this purpose, the best course to pursue is to arrange so that it shall be positively necessary to walk backwards and forwards to the counting-house night and morning. This is much better than attempting a walk without any special object, for in our climate the obstacles offered by the weather are so numerous that it would be postponed three or four times a week; but when it must be undertaken through all weathers, the benefit to health is fully attained, and the American's privilege to grumble is also gratified. Thus, by devoting only one hour, night and morning, to a four-mile walk to the house of business, sufficient bodily exercise may be obtained to keep the health tolerably good during this season; and in the summer it is possible to extend the walk, or even, by very early rising, to go into actual training for any particular exertion. Whilst discussing this subject I would strongly impress upon all those who have the manage-



ment of those establishments where young men are collected for the purposes of trade, that it is very important that some set time should be fixed for their meals. It is, I believe, the custom for one-third, or one-half, of the young men engaged to dine first, and then, as soon as they have hastily swallowed their meal, for the next division to take their places. This plan is supposed to be very advantageous to the proprietors; yet even of this fact I am very doubtful; but to the assistants it is exceedingly injurious.

In many cases, ten hours a day (in some few even a longer period) are given up to work, interrupted only by the scramble for a meal. This is more than the human frame is calculated to bear; even the farm laborer, or the "factory hand," is allowed his breakfast and dinner-hour; after which he returns to his work, having laid in a fresh stock of nervous excitability. The consequence of the long strain upon the mind and animal spirits is, that at times they are overpowered, and that errors occur that do more harm to the parties interested than is counterbalanced by the apparent saving of time. The above directions are suited to those cases only in which the state of health is still such as to allow of a prosecution of the usual studies or employment. But there are numerous instances in which the mind and body are both totally upset, and in which it is not only prudent, but imperatively necessary to give up all attention to business. These are somewhat beyond my province, for in such cases the aid of a medical man must always be required, and his counsels ought to be implicitly followed. They also rarely occur unattended by such a disordered state of stomach as to require the use of medicine and diet; and, moreover, such cases are those in which the moral control and superintendence of a judicial medical man are demanded. There may be some few in which change of air and scene, agreeable society, moderate exercise, etc., would be quite enough; but it is impossible to draw the line in such a way as to be useful, and, therefore, my advice would be such as I have given above.

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## SECT. 2.—ACTUAL TRAINING.—GENERAL MANAGEMENT AND DIET.

**TRAINING FOR WALKING.**—Whether the object is to compete in running or walking, a light run before breakfast for half an hour will just empty the small intestines of their last meal, and prepare the stomach for breakfast; more than half an hour, however, I am confident, is too long to wait, especially if, as ought always to be the case, the supper has been a mere apology for that meal. For an hour after breakfast



—that is, till near 11 o'clock the pedestrian should amuse himself as he likes best, with billiards or any other game; but at 11 he should be ready dressed in his walking costume, which should be of flannel throughout. For shoes there is nothing like dogskin upper-leathers, and a moderately thick sole for walking, or a much thinner one for running. From 11 till 2, or half-past 2, his first walk should be kept up without stopping for a moment—that is to say, after the first week, during which time he has been gradually increasing the time from an hour and a half to the above lengthened period. In any case the pedestrian should be accompanied by his trainer, who should amuse him as much as possible by anecdote or other mode of conversation. After dinner, one or two hours should be allotted to rest, in the recumbent position on a hard mattress, or horse-hair sofa; after which the same distance should be gone over, or nearly so. It should be borne in mind, that according to the intention of the pedestrian must be the distance over which he is trained; thus, if he is only preparing for a short race, either running or walking, he need only get himself into good health, and keep in that state by the means I have already described; and, in addition, take two or three hours walking and running exercise per day.

More than this has a tendency to diminish the speed, though, if the intention is to train for a long distance, that quality must, to a certain extent, be sacrificed. There is no question that speed is, to a certain extent, lost, if the work is kept up more than three or four hours a day—that is to say, speed for 100 or 200 yards. But if the object is to attain the highest speed for ten or fifteen miles, then the powers of endurance are to be tested; and the training must be not so much at a top speed for that distance, as at a less pace with occasional sprints for five miles farther at the least. The trainer should be a good walker himself, and should draw out the powers of his pupil by walking against him, taking care not to dishearten him, even if he has the power, by walking ahead; but just stimulating him by competition, and yet keeping up his spirits by allowing him to beat him in the amicable contest. Everything in many cases depends upon mental treatment, and many races are lost by the anxiety which is felt for many days and nights prior to the day of trial. In other animals there is not this knowledge of what is to come; but this is the worst difficulty met with in training men, many of whom will lie awake night after night from a nervousness as to the result. Hence the trainer should by all means encourage his man, and endeavor to do away this fear of losing by inspiring confidence in his powers on all occasions.

TRAINING FOR RUNNING is conducted on similar principles to that for walking, except that it is necessary to avoid too much running work in short matches. Here walking must be made the means of improving the general health, and running only adopted for about the length which is to be run. Beyond this, long-continued running makes a man slow, and he is apt to get his hands down, a habit which is fatal to running sprints. The trainer will, in preparing his man for these short matches, make him run daily two or three times over the distance intended; and either run against him with a start of a few yards in advance, which gives confidence, or time him exactly, keeping the result to himself. When the distance is a longer one, it must be done once or twice every day, according to its length, at a good speed, and with all the encouragement and excitement of competition with the trainer. In all cases of training for long distances, at least five or six hours a day must be spent in walking and running, changing from one to the other as a relief during the early part of training; but at last going a little beyond the racing distance every day, unless that is the very outside of which the man is deemed to be capable, when he will be overworked if he attempts it every day, and he must only do just as much as his trainer thinks he can perform without this injurious effect. Man, however, bears severe work in a wonderful manner; and if the appetite continues good and the sleep is sound, without dreaming or starting, the trainer need not be apprehensive that his man is doing too much.

REDUCTION OF FAT.—It will, I think, generally be advisable, before commencing strict training, to take an ordinary dose of aperient medicine. This may be either castor oil or Epsom salts and senna, commonly known as black draught or the compound rhubarb pills will answer very well in some persons. If the liver is torpid (which may be known by the pale color of the motions), then five grains of blue pill should be taken at night, and the oil or draught in the morning, and the same should be repeated every two or three days till the color becomes of a good brown or yellow. For any other purpose aperient medicine is to be avoided, and it will generally be found that beyond the first dose, which I think good as clearing off all undigested food, it will seldom be wanted. Some men have such an abundance of fat that they weigh 2 or even 3 st. more than they ought to do. The consequence is that not only is all that weight a dead loss, but the fat itself actually interferes with the due action of the muscles, and especially of the heart. Two modes of sweating may be adopted—one natural, the other artificial; but either should be used the first thing in the morning, rising from bed a little earlier for the express purpose.

NATURAL SWEATING is managed by putting on extra cloth-

ng over those parts more particularly which are loaded with fat. Thus, if the legs are very fat, two or three pair of trousers should be drawn on; if the abdomen is full, then a double apron of flannel should be suspended from the neck under the trousers; and if the arms and neck are loaded, one, two, or three thick Jerseys may be pulled on, and a woollen shawl wrapped round the neck. When thus clothed, a brisk walk, or slow run of a few miles, bring on a profuse perspiration, which may be kept up for an hour or so, either by being covered up with horse-rugs or a feather-bed, or by lying in front of a good fire. At the expiration of this time the whole of the clothes should be stripped off, beginning with the upper part of the body, and sponging each limb with hot salt and water before drying it with a coarse towel, after which Dinneford's gloves should be used freely, and the dressing may be as usual, taking care to expose each limb as short a time as possible. Such is the natural mode.

ARTIFICIAL SWEATING consists in the plan first proposed by Priestnitz, and since then so much used in this country by other practitioners. It is as follows:—The whole body should be stripped and immediately wrapped in a sheet wrung out of cold water, but not so as to get rid of all the water. Then, rolling the patient in a thick blanket, and including the arms like a mummy, he is to be placed beneath a feather bed, covering all up to the chin. In a quarter of an hour, or rather more, reaction comes on; and a most profuse perspiration-breaks out over the face, and, in fact, over the whole body. Among the hydropathists it is usual to supply the patient liberally with cold water, by small draughts at a time, during the sweat; but for our purpose this is not desirable, because it causes too great an action on the kidneys, thereby weakening the frame considerably. When this sweating has continued from an hour to an hour and a half, everything should be taken off, and cold water poured over the whole body, either by means of a shower-bath or common watering pot; then rub dry and clothe.

This artificial mode of sweating is not so likely to give cold as the natural one, and it does not exhaust and tire the frame nearly so much. It also produces great buoyancy of spirits, and it may be graduated much more exactly. It has, however, the disadvantage of producing liability to boils, which, in the rower, are sufficiently annoying without this sweating process. Wherever there is an unusual collection of fat, on that part must, in either mode, be heaped a greater amount of clothing, and especially if the shoulders should be clogged and loaded. No one can reach well over his toes if his shoulder blades are confined, or if his abdomen is too bulky; and

the first thing to be done is to sweat down the fat as I have described. Either of the above processes may be repeated two or three times a week, and they are far better than night sweating by Dover's powder or any of the sweating liquors which formerly were so much recommended.

**USE SWEATING LIQUORS.**—Whatever medicine is taken for this purpose, it would be unsafe either to use cold water next morning, or to expose the body as in rowing; and therefore they are quite inadmissible in an exercise which positively necessitates exposure of the body. It has been long held that for long continued or fast work sweating medicines are absolutely necessary; and no doubt many of our best runners have used them. I believe, however, in all cases, the hydropathic wet sheet packing will be found far better for pedestrian purposes. It gives much greater lightness of spirits, more agility of limb, and less tendency to rheumatic stiffness. Let any person make trial of it and he will "throw physic to the dogs" ever afterwards, at least for this purpose. It may be used twice or even thrice a week, before breakfast, and 1 lb. to 2 lb. or even 3 lb. may be got off each time it is applied. In sweating for pedestrian purposes the arms and body should be clothed much heavier than the legs. The great object is first to unload the great viscera from all fat interfering with their functions, and next to reduce the absolute weight of the whole body above the hips, including the abdomen, chest, neck, and arms, which are all of little use in walking or running as compared with the legs.

It is very easy to apply the wet sheet exclusively to the trunk and arms and to clothe the legs only slightly, or only just so much as to prevent a chill. Natural sweating is wholly inadmissible in this kind of training, since it shortens the stride from the quantity of clothing, and makes the pace slow, slovenly and dull; the choice, therefore, is between the wet sheet packing and a sweat by a scruple of Dover's powders at night, or half a pint of whey made with white wine, and with thirty drops each of antimonial wine and sweet spirits of nitre added. This is, no doubt, a strong sweater, but it upsets the stomach and leaves the skin to be easily chilled. In any case the whole body should be rubbed with gloves night and morning.

**THE FOLLOWING DIET** will, I think, be found the best for all training purposes:

**BREAKFAST.**—There is no doubt that the very best food for this meal is oatmeal porridge, with the addition of a certain allowance of beef or mutton, and a little bread; but many have the greatest objection to this diet, and never eat it without loathing. For them, I believe the next best beverage is

a pint of table-beer, home-made, and not too strong, and giving with it a larger allowance of bread. It is not desirable to stint the appetite, unless very enormous, or unless there is a great superabundance of fat; but I believe it will, in most cases, be found more advantageous to reduce the weight by work and sweating, than by starvation. The best mode of dressing the meat is to broil it; and here I must say a word about the degree of cookery to which it should be subjected. It is generally directed that the steak or chop should be quite underdone; this, I am sure, is a fallacy. In broiling, very little nutriment is lost, after the outside is once caught by the fire. Now, if nothing is lost, there is much gained by keeping the steak on the gridiron till properly done through; for the food is rendered much more palatable to most, and certainly more digestible to all. I have known many who were thoroughly disgusted by their "red rags," as they have called their underdone steaks, and, from their dislike to such food, were quite unable to digest them. Tea and coffee are not good for training purposes, though I do not think them so bad as is generally supposed, if not taken too strong; cocoa is too greasy, and not so good as tea—which, if taken, should not be green.

I am inclined to think, that in those cases where tea or coffee is habitually taken, and porridge or beer is much disliked, it is better to allow them than to attempt too great an alteration in diet. Butter, sauces, and spices should be carefully avoided; and nothing but salt, and a very slight dash of black pepper used as a condiment.

DINNER.—This important meal should consist of roast beef or mutton, or, occasionally, a boiled leg of mutton may be allowed as a change; but veal, pork, and salt beef or bacon should be avoided; also goose, duck, and wildfowl generally. Roast fowls, or partridges, or pheasants, are very good food. Hare is too apt to be accompanied by high-seasoned stuffing, without which it is scarcely palatable. Nothing is better than venison, when come-at-able; but it should be eaten without seasoned sauce or currant jelly. As to vegetables, potatoes may be eaten, but very sparingly—not more than one or two at a meal; cauliflower or broccoli only as an occasional change, and no other vegetable is allowable. Bread may be given *ad libitum*, and about a pint to a pint and a half of good sound home-made beer. If this does not agree, a little sherry and water, or claret and water, may be allowed with the meal; and a glass or two of the former wine, or of good sound port, after dinner.

When the training is continued for any length of time, and the previous habits of the party have accustomed the stomach to it, I have found the occasional use of white fish—such

as cod or soles—a very useful change. Nothing disorders the stomach of man more than keeping to one diet, and this must be constantly borne in mind by the trainer. The round he can make is not very extensive, but let him by all means stretch it to the utmost limits of which it is capable. It is even desirable to give an occasional pudding, but it should always have bread for its foundation. A good cook will easily make a very palatable pudding of bread with a little milk and an egg or two, and this, served up with fresh green gooseberries boiled, or in any common preserve, is by no means disagreeable to the palate or unwholesome to the stomach; but let it be only as a change, not as otherwise useful. The grand articles of diet are beef and mutton, with bread or porridge, and if the stomach and palate would accept them gratefully, no change would be necessary; but, as they seldom will, the best plan is not to attempt too much.

**SUPPER.**—Many trainers object to this meal; but I am satisfied, from experience, that unless the training is of so long a duration as to thoroughly accustom the stomach to the long fast from dinner to the next morning, it is much better to allow a light meal at eight o'clock. Oatmeal porridge is for this purpose the best; and no one will be the worse for a pint of it, with some dry toast to eat with it, or soaked in the porridge itself. I do not believe that meat is ever necessary at night, except in very delicate constitutions, who require unusual support. For such cases I have found a chop at night, with a glass of port wine, or even of egg and sherry, a very valuable means of keeping up the strength. Indeed, it will be found that no absolute rule can be laid down for all cases; and the trainer requires great experience and aptness for his task to enable him to bring all his men out in the same degree of relative strength. Nothing is so likely to destroy a boat's chance as a variable state of condition in the component parts of the crew. It is far better that all should tire equally, than that half should shut up early in the race, while the others are capable of using their full strength.

Hence, as I have before remarked, some will require much more liberal and generous diet than others. If, for instance, the habit is gross, and the appetite good, it will be needful to allow only the plainest diet, and to vary it very little. By this precaution, enough, and not too much, is sure to be taken, and the amount of work will insure its digestion. If, on the other hand, the constitution is delicate, with a want of appetite, want of digestion, and tendency to too great a loss of flesh, then it is desirable to allow considerable change from day to day; and, as far as is prudent, to comply with

the particular fancies of the palate. Many stomachs bear port wine well; and in those who have a tendency to diarrhoea it is often indispensable. Others, again, are purged by oatmeal, and this is a sufficient reason for avoiding porridge. In some all the bread should be toasted, to prevent diarrhoea, whilst in others, when constipation is present, coarse brown bread, made from the genuine undressed flour, is a good remedy for that troublesome evil. Whatever bread is eaten should be two days old, and the beef and mutton hung as long as the weather will permit. The best part of a sheep for chops is the leg of a two or three-year-old wether; and for steaks, a well-hung rump or the inside of a sirloin.

It is often the practice to allow the crew to put into a river-side tavern during the hours of practice, and take half a pint or a pint of beer or porter each. This plan I am sure is bad, the strength ought never to depend on *immediate stimuli*, and it is far better to shorten the practice than to keep it up by these means. I am quite sure that in training there are very few who require more than three pints, or at the outside two quarts of good beer per day, of the strength of five bushels to the hogshead; and the average quantity required is certainly not more than two pints and a half per man. Allowance must of course be made for previous habits, and for strength or weakness of constitution. In the early days of practice, and in the race itself, great distress sometimes occurs; there is considerable blueness of face from congestion, and the breathing is labored and difficult. The best remedy for this state is a glass of warm brandy and water, and plenty of hard friction on the feet, legs and thighs; or, if it still persists, a warm bath at 98 degrees.

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### SECT. III.

#### TREATMENT OF ACCIDENTS OCCURRING IN TRAINING.

**BLISTERS OF THE HANDS AND FEET.**—These troublesome little companions occur either on the hands from rowing, or on the feet from walking; in both cases without due preparation. They also occur in a still more troublesome situation, either from the thwart in rowing, or from the saddle in riding; but in the latter case only in the very raw and young equestrian. Should they arise on the hands, they should be pricked with a fine needle, if this can be done before they have burst. The needle should be inserted obliquely, and the watery fluid contained in the blister should then be pressed out; and this should be repeated as soon as the blister has filled a second or third time. In this way the contact of the air is avoided, and in two days the true skin becomes



protected by a new cuticle or scarf-skin. If, unfortunately, the blister is broken, the best plan is to apply some collodion with a brush; but it gives considerable pain and seldom remains on more than six hours, after which time it requires renewal. If the pain of this is objected to, then apply either finely carded (medicated) cotton in a thin layer under a kid glove, or finely powdered gum arabic; but in either case the hands must be kept from water carefully till the expiration of twenty-four hours.

If possible, three days should elapse before the oar is again taken in hand; but if the oarsman cannot be spared, a kid glove should be put on over the collodion. When the feet are the seat of the mischief, there is the same necessity for the preservation of the cuticle, and the needle should be used in the same way; if, however, this protection is removed, a piece of fine kid should be spread with soap plaister, and applied over the skin, extending for at least half an inch beyond the blister in every direction. This treatment answers on the feet, while on the hands it is wholly useless, because the friction of the oar soon rubs off the plaster, while under the shoe it remains tolerably well and smoothly applied. Where the blister exists on the seat of honor, in consequence of the friction of the thwart, it is very difficult to manage, and I have seen hundreds of men with their flannel trousers extensively stained with blood from this cause. Collodion is the best remedy, but even that is of little use, and the only plan I have ever known at all effectual is to wear a pair of tight, wash-leather drawers, extending only a few inches down the thighs. If these are made to fit very nicely, and are well oiled with neatsfoot oil, they will afford astonishing relief, and enable a man with extensive "raws" to row with tolerable ease and comfort; they require, however, to be carefully cleaned and oiled each time they are worn, without which attention they are worse than useless.

**CORNS AND BUNIONS.**—Blisters are troublesome enough to the pedestrian, but corns are a thousand times worse. The former are only temporary evils, whilst the latter are a perpetual source of discomfort and misery. Corns are of two kinds, hard and soft; and this distinction is not only dependent upon situation, as some people imagine, for the essence and even the cause of a soft corn are entirely different and distinct from those producing the hard variety. The soft corn occurs only between the toes, and partakes more of a warty character than that of the true corn. There is really a growth of the cutis or true skin, which shoots up some little sprouts covered with a cheesy matter, and these become exquisitely painful if pressed upon by the adjoining toe.



On the other hand, the true or hard corn is simply an effort of Nature to protect a part unduly pressed upon; but the effort is carried to an inordinate extent. It is an over secretion or formation of cuticle, which, as it becomes thicker and harder, is again pressed into the inflamed cutis by the shoe, and thus, by acting as a foreign body, aggravates the mischief, and causes it also to react on itself, by increasing the already inordinate secretion of cuticle.

Thus these causes act and react on each other, till you often find a deep process or processes of hardened cuticle driven into the skin, and which are often called by the corn-cutter the root or roots of the corn. But it must be understood that these do not grow first, but are the last results of a very obstinate and long-standing mischief. In all cases the corn, first of all, has no root whatever; its growth is not from within outwards, but from without inward, and the term "root," therefore, is misapplied. Many tricks are passed off upon the credulous patients of the corn-cutter, by passing off pieces of quill or nail, or horn, as extracted from the corn, and often a fee is charged for each root removed. I have known thirty-six guineas charged for as many "roots" extracted at one sitting, and paid, too, for an operation which has afforded only present relief. Bunions are different in appearance and character from either hard or soft corns; they are frequently caused by pressure, but in them the skin is not the seat of the inflammation, but the synovial bag on the inner side of the ball of the great toe, or sometimes on the outer side of the middle of the foot, or on the instep. In all cases they are soft, pulpy, bag-like projections, often, though not always, without hardness or roughness of skin. They are attended with great pain and tenderness, and cause considerable lameness.

The treatment of soft corns should be as follows: With the nail pick off as much of the cheesy matter as can be removed; then, if the next day can be given up, apply a piece of lunar caustic to the surface, rubbing it pretty well in, but avoiding contact with the adjoining skin. After this, keep a piece of carded cotton between the toes night and day, and it will be found that after twenty-four hours' rest all pain will have disappeared, the surface will have lost its moisture, and will have become hard, black and dry. If the cotton is renewed daily this state of ease will be maintained for a week or ten days; but then it is necessary to pick off the blackened surface and reapply the caustic, again using the carded cotton. This second application will probably last a fortnight, but by that time the edges of the blackened cuticle become loose, and the application should be repeated; but not, in all probability, till three weeks have elapsed. In this way,

by three or four applications, the most obstinate and painful soft corns yield to treatment and become permanently cured; but the skin between the toes should be kept constantly washed and rubbed with a soft towel, so as to remove every particle of sécretion daily.

With regard to hard corns, nothing will be effectual as a cure unless the pressure which caused them is discontinued. In that case they require very little treatment; but if it is continued, as it must be when they occur on the sole of the foot, the only remedies are palliative, and require constant and careful repetition. Corn-cutters are constantly holding out certain hopes of a cure, but this is a fraud upon the unwary, and only leads to the picking of their pockets. It is quite true that a skillful corn-cutter will remove, without pain, every vestige of a corn, and will give instant and entire relief; but this only lasts for a fortnight or three weeks, the time varying according to the rapidity of growth in each particular case. Any one, however, who has the use of his hands may readily treat his own corns, if he will attend to the following directions:—In the first place, the cuticle should never be allowed to grow to such a degree as to occasion pain; it should be carefully removed before that time, and the best instrument for its removal is a pair of nail-scissors; with these a small piece of the thickened cuticle should be caught hold of and raised from its bed at the same time, then gradually closing the blades, it is removed without any great pain; for if much is given, it is only necessary to raise the scissors still more, and, as it were, drag the corn out of its bed, when the pain ceases, and the excision of that portion is effected.

After removing this small slice, another adjoining slice is to be taken hold of and removed in the same way, till all vestige of the hardened cuticle is gone; after which the part may either be covered with a piece of wash-leather spread with soap-plaister, or left to its fate. The former is of course the better plan; but, if the corn is removed as often and as fast as it grows, there is no necessity for adopting it. On the sole of the foot the scissors cannot be used, and this is the most unmanageable situation by far. It is almost impossible for the sufferer to cut these himself, either with a knife or scissors; and he should remove them either, when dry, with a piece of coarse sandpaper fixed on a rounded surface, or, when soaked, with a piece of pumicestone. This treatment will suffice for corns which are troublesome while training; but when rest can be given they should be removed, either with caustic, as described for the soft corn, or with tincture of iodine applied with a paint-brush. In either case the cuticle should be first pared down, and then one or

other of the above remedies should be applied; but the inflammation, especially after the second application, is considerable, and rest must generally be given. They are both, therefore, inadmissible in training. Bunions should have two or three leeches applied to them every other day for a week, after which they may be left alone till the bites are well, and then they should be brushed with tincture of iodine every third day. This treatment will generally suffice, but not in very obstinate cases. Such cases, however, are seldom adapted for training, and therefore are not within my province.

**BOILS.**—These are an effort of nature to get rid of a dead piece of cellular membrane by means of inflammatory action. In consequence of some peculiar condition of the blood, of the exact nature of which little is known, a death (or sloughing, as it is called) of a portion of cellular membrane takes place under the true skin; to remove this foreign body nature sets up an inflammation, which is invariably of a slow and congestive character. It appears as if the poisonous nature of the slough irritates the surrounding parts to such a degree as in some measure to interfere with the process of absorption, and consequently a painful and hardened circle of swelled and reddened skin is formed around the dead cell. In most cases the thickening is so great as to stop the circulation in the interior of the circle, and the boil remains stationary for a long time. The only remedy for this condition is either application of some stimulating greasy application—such as a linseed poultice, or the division by means of a knife. Either of these remedies more or less speedily put an end to the inactive condition, and then a healthy suppuration goes on to remove the cell, and by throwing up fresh granulations, as they are called, to restore what has been removed. Such is the nature and ordinary treatment of a boil; but in training it is almost impossible to bear the use of the knife if the boil is on any part which is subject to much friction.

In other situations it may be used, but if a boil occurs on the seat of the rower, as is often the case, if the knife is used at least a week or ten days must be lost before the patient can expose the raw surface to the friction of the thwart. Here, therefore, the best plan is to apply a plaister, spread on leather, and composed of equal parts of mercurial and opiate plaister. This stimulates and relaxes the inflamed vessels, and the opiate relieves the pain to a great degree; but even this is only a partial remedy, as without rest it is impossible entirely to relieve boils. To those who are known to be subject to boils I would recommend, as a prevention, the use of a wash of nitrate of silver of the strength of 15 to 20 grains

to the ounce. This should be painted over the part every night, and will, of course, turn it more or less black; but it seems to give tone to the vessels, and to prevent that low and congestive state which precedes the death of the cellular membrane; at all events it prevents the formation of boils.

HERNIA OR RUPTURE is a mechanical protrusion of a portion of intestine, and, in the ordinary way, may be either at the naval or at the groin. Wherever it is it requires the constant use (by day only) of a truss; and all that is required is, that the instrument should be exactly adapted to the part which it has to perform. A rupture may be generally distinguished from other tumors, even by an unskilled person, if the hand is placed upon it during the act of coughing. At the moment when the cough is heard, a strong impulse will be given to the hand, and the hernia will for a moment appear much harder and somewhat larger. This peculiar sensation can scarcely be mistaken, and the sufferer should at once proceed to a good surgical instrument maker for the purpose of being fitted with a good truss.

HÆMORRHOIDS, or, as they are commonly called, piles, are very often exceedingly troublesome in training; they are generally symptomatic of congestion of the liver, and are relieved by those measures which remove that condition. The reason for this is obvious—the veins which return the blood to the heart from the lower bowels pass through the liver in their way, and consequently, whatever impedes the passage of the blood through them has a tendency to produce the effect on the hæmorrhoidal veins. Hæmorrhoids are, in fact, varicose veins in the rectum, sometimes bleeding in consequence of their walls giving way; they are also divided into external and internal piles, the distinction, however, being only one of situation. It will be unnecessary for me to describe the appearance of these troublesome little swellings, as they are so exceedingly common as to be well known to almost every one. In their treatment three points are to be attended to—first, to unload the liver; secondly, to prevent mechanical irritation by the presence and passage of solid fæces; and, thirdly, to allay the inflammation already existing by local remedies. The first and second of these objects may generally be combined, but in very badly congestive states of the liver a dose or two of blue pill must be given in addition to this remedy. It should be avoided, however, if possible, as its *immediate* effect is rather to aggravate than allay the local irritation.

[THE END.]

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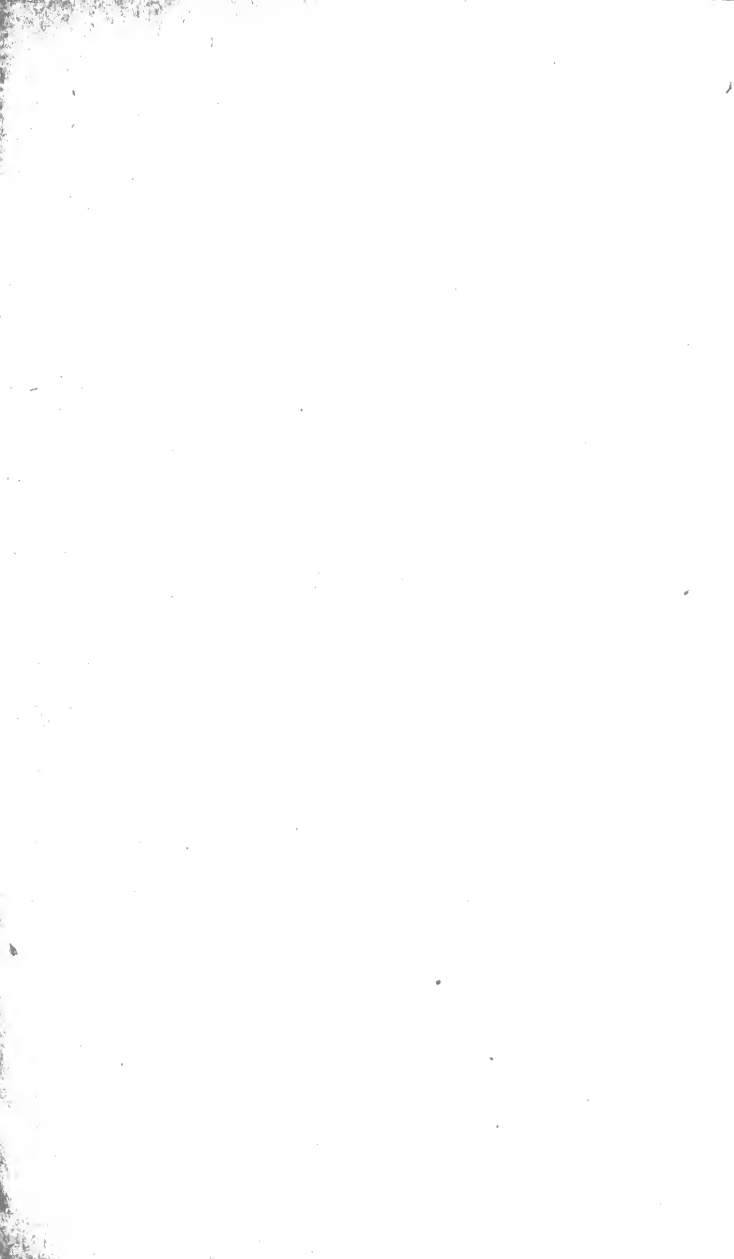
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